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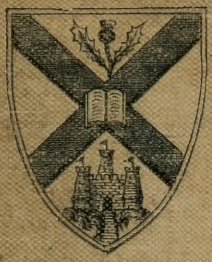

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The Right Honourable LORD MONCREIFF, late Lord Justice-Clerk of Scotland.
The Honourable LORD ADAM. | EDWARD KENT KARSLAKE, Esq., Q.C.
The Right Honourable LORD FIELD. | WILLIAM SMYTHE, Esq., of Methven.
Chairman of Board of Directors in Edinburgh—ANDREW BEATSON BELL, Esq., Advocate.
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ANNUITIES—LOANS—ENDOWMENTS.

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TO STUDENTS.

STYLOGRAPHIC PENS.—A large selection always on hand. We obtained the only award given for reservoir pens at Edinburgh International Exhibition, 1886.

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NOTE BOOKS.—A large stock is kept so that the patterns selected may be renewed all through the Session, thus enabling Students to keep uniform sets.

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ROYAL INFIRMARY, EDINBURGH.

In this Hospital a portion of the beds is set apart for Clinical Instruction by the Professors of the University of Edinburgh. Courses of Clinical Medicine and Surgery are also given by the Ordinary Physicians and Surgeons. Special Instruction is given in the Medical Department on the Diseases of Women, of the Skin, Physical Diagnosis, &c., and in the Surgical Department on Diseases of the Eye, the Ear and the Larynx. Separate Wards are devoted to Venereal Diseases, Diseases of Women, Diseases of the Eye; also to cases of Incidental Delirium or Insanity. Post-mortem Examinations are conducted in the Anatomical Theatre by the Pathologists, who also give practical Instruction in Pathological Anatomy and Histology.

MEDICAL DEPARTMENT.

Consulting Physicians, ... Dr George W. Balfour. Prof. Sir Douglas Maclagan.

Consulting Physician for Diseases of Women, ... Dr Alexander Keiller.

Professors of Clinical Medicine, ... Dr Alexander R. Simpson. Dr T. Grainger Stewart. Dr T. R. Fraser. Dr W. S. Greenfield.

Ordinary Physicians and Lecturers on Clinical Medicine, ... Dr Claud Muirhead. Dr David J. Brakenridge. Dr John Wyllie. Dr J. O. Affleck.

Extra Physician and Lecturer on Diseases Peculiar to Women, ... Dr J. Halliday Croom.

Assistant Physicians, ... Dr Andrew Smart. Dr Alexander James. Dr Byrom Bramwell.

Extra Assistant Physicians for Diseases of Women, ... Dr D. Berry Hart. Dr A. H. Freeland Barbour.

Extra Physician for Diseases of the Skin, ... Dr Allan Jamieson.

SURGICAL DEPARTMENT.

Consulting Surgeons, ... Dr J. D. Gillespie. Dr P. H. Watson. Mr Joseph Bell.

Consulting Dental Surgeon, ... Dr John Smith.

Professor of Clinical Surgery, ... Mr Annandale.

Professor of Surgery, ... Mr Chiene.

Ordinary Surgeons, ... Mr John Duncan. Mr A. G. Miller. Dr P. H. Maclaren.

Ophthalmic Surgeons, ... Dr Argyll Robertson. Mr George A. Berry.

Assistant Surgeons, ... Dr C. W. MacGillivray. Mr J. M. Cotterill. Mr Charles W. Cathcart. Mr Francis M. Caird. Dr J. W. B. Hodsdon. Dr J. Shaw M'Laren.

Dental Department, ... Surgeons to the Edinburgh Dental Hospital and School.

Surgeon to Ear and Throat Department, ... Dr P. McBride.

Assistant Ophthalmic Surgeon, ... Dr George Mackay.

Assistant Surgeon to Ear and Throat Department, ... Dr M'Kenzie Johnston.

Pathologists, ... Dr Alexander Bruce. Dr William Russell.

Hospital Tickets.—Perpetual Ticket, in One Payment, £12; Annual Ticket, £6, 6s., Six Months, £4, 4s.; Three Months, £2, 2s.; One Month, £1, 1s. Separate Payments, amounting to £12, 12s., entitle the Student to a Perpetual Ticket on production of previous Season Tickets.

Appointments.—No Fees are charged for any Medical or Surgical Appointments in this Hospital, which are as follows:—

1. RESIDENT PHYSICIANS and SURGEONS, who must be registered as legally qualified Practitioners, are from time to time appointed by the Managers on the recommendation of the Physicians and Surgeons. The holders of these Offices live in the House free of Charge. The appointment is for six months, but may be renewed at the end of that period by special recommendation.
2. SPECIAL NON-RESIDENT CLINICAL CLERKS, who must also be registered as legally qualified Practitioners, are appointed by the Managers on the recommendation of the Physicians and Surgeons. The appointment is on the same terms as that of the Resident Physicians and Surgeons.
3. CLERKS and DRESSERS are appointed by the Physicians and Surgeons. These appointments are open to all Students and Junior Practitioners holding Hospital Tickets.
4. ASSISTANTS in the PATHOLOGICAL DEPARTMENT are appointed by the Pathologists.

JAMES S. TRAINER, *Treasurer and Clerk.*

SCHOOL OF MEDICINE, EDINBURGH.

FOUNDED 1505.

THE LECTURES qualify for the University of Edinburgh and the other Universities; the Royal Colleges of Physicians and Surgeons of Edinburgh, London, and Dublin; the Faculty of Physicians and Surgeons of Glasgow, and the other Medical and Public Boards.

In accordance with the Statutes of the UNIVERSITY OF EDINBURGH, any four out of fifteen qualifying Classes required for GRADUATION may be attended in this School, as well as the Practical Classes of Physiology, Pathology, and Materia Medica. The Regulations require that the Fee for any Class, taken for GRADUATION in EDINBURGH, shall be the same as that for the corresponding Class in the University.

The whole Education required for GRADUATION at the UNIVERSITY OF LONDON may be taken in this School.

SUMMER SESSION, 1890.

On Thursday, 1st May, the Lectures were commenced.

ANATOMY,	PRACTICAL ANATOMY, . 9 a.m. till 5 p.m. COURSE OF DEMONSTRATIONS, 9 a.m. & 11 a.m.	Dr J. SYMINGTON (Minto House, Chambers St.).
ANATOMY,	PRACTICAL ANATOMY, . 9 a.m. till 5 p.m. COURSE OF DEMONSTRATIONS, 9 a.m. and 11 a.m.	Mr MACDONALD BROWN (Surgeons' Hall).
CHEMISTRY,	PRACTICAL CHEMISTRY, . 9 a.m. till ANALYTICAL CHEMISTRY, . 5 p.m.	Dr STEVENSON MACADAM (Surgeons' Hall).
CHEMISTRY,	PRACTICAL CHEMISTRY, . 9 a.m. till ANALYTICAL CHEMISTRY, . 5 p.m.	Mr J. FALCONER KING (Minto Ho., Chambers St.).
CHEMISTRY,	PRACTICAL CHEMISTRY, . 9 a.m. till ANALYTICAL CHEMISTRY, . 5 p.m.	Mr IVISON MACADAM (Surgeons' Hall).
CHEMISTRY,	PRACTICAL CHEMISTRY, . 9 a.m. till ANALYTICAL CHEMISTRY, . 5 p.m.	Dr DRINKWATER (31 Chambers Street).
CHEMISTRY,	PRACTICAL CHEMISTRY, . 9 a.m. till ANALYTICAL CHEMISTRY, . 5 p.m.	Mr J. RYMER PATERSON (Marshall Street).
CHEMISTRY,	PRACTICAL CHEMISTRY, . 9 a.m till ANALYTICAL CHEMISTRY, . 5 p.m.	Dr A. P. AITKEN (Dick's Royal Veterinary Col.).
MATERIA MEDICA AND THERAPEUTICS, . . 9 a.m.		Dr WILLIAM CRAIG (Surgeons' Hall).
PRACTICAL MATERIA MEDICA including Practical Pharmacy, . . .	10 a.m. & 2 p.m.	
MATERIA MEDICA AND THERAPEUTICS, . . 9 a.m.		Dr RALPH STOCKMAN (Minto House, Chambers Street).
PRACTICAL MATERIA MEDICA including Practical Pharmacy, . . .	. 10 a.m.	
MIDWIFERY AND DISEASES OF WOMEN, . . 10 a.m.		Dr HALLIDAY CROOM (Minto Ho., Chambers St).
MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN, . . .	10 a.m.	Dr DAVID BERRY HART (Surgeons' Hall).
MIDWIFERY & DISEASES OF WOMEN & CHILDREN, 10 a.m.		Dr BARBOUR (Park Place).
MEDICAL JURISPRUDENCE AND PUBLIC HEALTH, 11 a.m.		Dr LITTLEJOHN (Surg. Hall).
ROYAL INFIRMARY, . . . 12 noon.		
CLINICAL MEDICINE (Tues. and Frid.).	12 noon.	Drs CLAUD MUIRHEAD, BRAKENRIDGE, WYLLIE, and AFFLECK. Dr HALLIDAY CROOM (*For Diseases of Women*). (Royal Infirmary).
,, ,, Tutorial Class for Physical Diagnosis.*		
CLINICAL SURGERY (Mondays and Thursdays), 12 noon.		Mr DUNCAN (Roy. Infirm'y).
,, ,, ,, ,, ,,		Mr A. G. MILLER, do.
,, ,, Tutorial Classes for Practical Surgery.*		
PRACTICAL PHYSIOLOGY, . . 10 a.m. till 4 p.m.		Mr JAMES HUNTER (Minto House, Chambers' St.).
PRACTICAL PHYSIOLOGY,	at 10 a.m., and other hours.	Dr NOËL PATON (Surgeons' Hall).
PRACTICAL PATHOLOGY,	8, 9, 10, and 11 a.m.	Dr ALEXANDER BRUCE (Surgeons' Hall).
PRACTICAL PATHOLOGY, . . . 9 a.m. and 10 a.m.		Dr WILLIAM RUSSELL (27 Nicolson Square).
LARYNGOLOGY AND MEDICAL OPHTHALMOLOGY, and the Uses of Electricity in Medical Treatment and Diagnosis, .	. 9 a.m.	Dr JOHN WYLLIE (27 Nicolson Square).

* Under the Superintendence of the Lecturers on Clinical Medicine and Surgery.

Diseases of the Ear, Tues. and Fri. (with Clinical Instruction at Hospital, 6 Cambridge Street, Lothian Rd., Mon., Thurs., and Sat., 12 noon),	9 a.m.	Dr Kirk Duncanson (6 Cambridge Street).
Practical Medicine and Physical Diagnosis,	9 a.m.	Dr James (31 Chambers St.).
Practice of Medicine,	9 a.m.	Dr G. A. Gibson (Minto House, Chambers St.).
Practice of Medicine,	9 a.m.	Dr Byrom Bramwell (Park Pl.).
Practice of Medicine, with Clinical Instruction,	9 a.m.	Dr R. W. Philip (Dispensary, 13 Bank Street).
Botany,	9 a.m.	Mr A. N. M'Alpine (Minto House, Chambers St.).
Practical Botany,	10 a.m.	
Diseases of the Skin, Clinical Instruction on Wednesdays and Saturdays,	10 a.m.	Dr Allan Jamieson (Royal Infirmary).
Vaccination, with special reference to Public Vaccination in England (Wed. and Sat.),	12 noon and 1 p.m.	Dr Husband (Royal Dispensary).
Vaccination, with special reference to Public Vaccination in England (Thursdays),	3 p.m.	Dr J. B. Buist (Western Dispensary).
Practice of Vaccination (Mondays),	4 p.m.	Dr J. B. Buist (Cowgate Dis.).
Natural History, Course of Lectures,	3 p.m.	Mr J. Arthur Thomson (Park Place).
Natural History, Practical Class and Laboratory Work, Series of Demonstrations,		
Diseases of the Eye (Mondays, Wednesdays, and Fridays),	3 p.m.	Dr John Robertson (Minto Ho., Chambers St.).
Diseases of the Eye, daily (Clinical Instruction at Royal Infirmary and Edinburgh Eye Dispensary),	10 a.m.	Mr George Berry (Surgeons' Hall).
Insanity (Tuesdays and Fridays), with practical instruction in Asylum Wards,	2 p.m.	Dr J. Batty Tuke (Surgeons' Hall).
Operative Surgery & Surgical Anatomy,	4 p.m.	Dr C. W. MacGillivray (Surgeons' Hall).
Operative Surgery & Surgical Anatomy,	8 a.m.	Mr Chas. W. Cathcart (27 Nicolson Square).
Operative Surgery & Surgical Anatomy,	4 p.m.	Mr Francis M. Caird (Park Pl.).
Operative Surgery and Surgical Anatomy,	8 a.m.	Mr Hodsdon (Minto Ho., Chambers Street.)
Clinical Midwifery, at 9.30 a.m. Daily, at Royal Maternity Hospital, during Autumn,		Dr Halliday Croom (Minto Ho., Chambers St.).
Practical Midwifery and Clinical Gynæcology (Fridays),	1 p.m.	Dr Peter Young (Royal Dispensary).
Systematic Gynæcology (Tuesdays and Fridays),	10 a.m.	Dr Brewis (27 Nicolson Sq.).
Clinical Gynæcology (Mondays and Thursdays),	4.30 p.m.	Dr Brewis (New Town Dis.).
Diseases of Children, Clinical Lectures,	10 a.m.	Mr Joseph Bell and Dr Burn Murdoch (Sick Children's Hospital).
Diseases of Infancy and Childhood,	2 p.m.	Dr J. W. Ballantyne (Minto Ho., Chambers St).
Diseases of Infancy and Childhood, Clinical Instruction,	4.30 p.m.	Dr John Thomson (New Town Dispensary).
Diseases of the Chest, Clinical Course, (Tuesdays and Thursdays),	4 to 6 p.m.	Dr R. W. Philip (Dispensary, 13 Bank Street).
Diseases of the Tropics and Climatology (Mondays, Wednesdays, and Fridays),	5 p.m.	Dr R. W. Felkin (Park Place).
Classes for Women. Practical Anatomy,	9 a.m. to 5 p.m.	Dr J. Symington (30 Chambers Street).
Practical Anatomy,		Dr Alfred W. Hughes (Surgeon Sq.).
Practical Chemistry,	2 p.m.	Mr Ivison Macadam (30 Chambers Street).
Practical Pathology,		Dr Alex. Bruce (Surgeon Sq.).
Materia Medica,	3 p.m.	Dr Wm. Craig (30 Chambers St.).
Materia Medica,		Dr Ralph Stockman (Surgeon Sq.).
Leith Hospital,	3 to 5 p.m.	Dr Finlay (Leith Hospital).
Midwifery,	5 p.m.	Dr J. W. Ballantyne (30 Chambers Street).
Medical Jurisprudence and Public Health,	4 p.m.	Mr Harvey Littlejohn (30 Chambers Street).
Botany,	11 a.m	Mr Robert Turnbull (30 Chambers Street).

WINTER SESSION, 1890-91.

On Wednesday, 1st October, the PRACTICAL ANATOMY ROOMS and CHEMICAL LABORATORIES will be opened. *On Tuesday, 14th October*, the Lectures will be commenced.

ANATOMY,	PRACTICAL ANATOMY, . 9 a.m. till 5 p.m. COURSE OF LECTURES, . . 1 p.m. COURSE OF DEMONSTRATIONS, . . 4 p.m.	Dr J. SYMINGTON (Minto House, Chambers St.).
ANATOMY,	PRACTICAL ANATOMY, . 9 a.m. till 5 p.m. COURSE OF LECTURES, . . 9 a.m. COURSE OF DEMONSTRATIONS, . . 4 p.m.	MR MACDONALD BROWN (Surgeons' Hall).
CHEMISTRY,	(LECTURES, . . . 10 a.m. PRACTICAL CHEMISTRY, . 9 a.m. till ANALYTICAL CHEMISTRY, . 5 p.m.	DR STEVENSON MACADAM (Surgeons' Hall).
CHEMISTRY,	(LECTURES, . . . 10 a.m. PRACTICAL CHEMISTRY, . 9 a.m. till ANALYTICAL CHEMISTRY, . 5 p.m.	MR J. FALCONER KING (Minto Ho., Chambers St.).
CHEMISTRY,	(LECTURES, . . . 9 a.m. PRACTICAL CHEMISTRY, . 9 a.m. till ANALYTICAL CHEMISTRY, . 5 p.m.	MR IVISON MACADAM (New Veterinary College, Leith St. and Surgeons' Hall).
CHEMISTRY,	(LECTURES, . . . 10 a.m. PRACTICAL CHEMISTRY, . 9 a.m. till ANALYTICAL CHEMISTRY, . 5 p.m.	DR DRINKWATER (31 Chambers Street).
CHEMISTRY,	(LECTURES, . . . 10 a.m. PRACTICAL CHEMISTRY, . 9 a.m. till ANALYTICAL CHEMISTRY, . 5 p.m.	MR J. RYMER PATERSON (Marshall Street).
CHEMISTRY,	(LECTURES, . . . 10 a.m. PRACTICAL CHEMISTRY, . 9 a.m. till ANALYTICAL CHEMISTRY, . 5 p.m.	DR A. P. AITKEN (Dick's Royal Veterinary College, 8 Clyde Street).
PRACTICE OF PHYSIC, . . 9 a.m.		DR JOHN WYLLIE (27 Nicolson Square).
PRACTICE OF PHYSIC, . . 9 a.m.		DR JAMES (31 Chambers Street).
PRACTICE OF PHYSIC, . . 9 a.m.		DR J. O. AFFLECK (Surgeons' Hall).
PRACTICE OF PHYSIC, . . 9 a.m.		DR BYROM BRAMWELL (Park Place).
PRACTICE OF PHYSIC, . . 9 a.m.		DR G. A. GIBSON (Minto Ho., Chambers St.).
SURGERY, ... 10 a.m.		DR C. W. MACGILLIVRAY (Surgeons' Hall).
SURGERY, ... 10 a.m.		MR CHARLES W. CATHCART (27 Nicolson Square).
SURGERY, ... 10 a.m.		MR FRANCIS M. CAIRD (Park Pl.).
SURGERY, ... 10 a.m.		MR HODSDON (Minto Ho., Chambers Street).
MIDWIFERY AND DISEASES OF WOMEN, . 11 a.m.		DR MILNE MURRAY (Park Place).
MIDWIFERY AND DISEASES OF WOMEN, . 11 a.m.		DR MATHESON (Marshall Street).
INSTITUTES OF MEDICINE, . . . 11 a.m.		MR JAMES HUNTER (Minto House, Chambers Street).
PRACTICAL PHYSIOLOGY, 10 a.m. or other hours,		
INSTITUTES OF MEDICINE, . . . 11 a.m.		DR NOËL PATON (Surgeons' Hall).
PRACTICAL PHYSIOLOGY, . at suitable hours.		
GENERAL PATHOLOGY, . . . 3 p.m.		DR ALEX. BRUCE (Surgeons' Hall).
GENERAL PATHOLOGY AND MORBID ANATOMY. . . 3 p.m.		DR WM. RUSSELL (27 Nicolson Sq.).
PRACTICAL PATHOLOGY, . . . 9 a.m.		
ROYAL INFIRMARY, ... 12 noon.		
CLINICAL MEDICINE (Tues. and Fri.), 12 noon.		DRS CLAUD MUIRHEAD, BRAKENRIDGE, WYLLIE, and AFFLECK. DR HALLIDAY CROOM (*For Diseases of Women*). (Roy. Infirm'y).
—— Tutorial Class for Physical Diagnosis,*		
CLINICAL SURGERY (Mon. and Thur.), . 12 noon.		MR DUNCAN (Royal Infirmary).
CLINICAL SURGERY (Mon. and Thur.), . 12 noon.		MR A. G. MILLER (Roy. Infirmary).
—— Tutorial Classes for Practical Surgery.*		
MEDICAL JURISPRUDENCE & PUBLIC HEALTH, 2 p.m.		DR LITTLEJOHN (Surgeons' Hall).
MATERIA MEDICA AND THERAPEUTICS, . 2 p.m.		
PRACTICAL MATERIA MEDICA, including Practical Pharmacy, . . 9 a.m. and 3 p.m.		DR WILLIAM CRAIG (Surgeons Hall).
MATERIA MEDICA AND THERAPEUTICS, 2 p.m.		DR RALPH STOCKMAN (Minto Ho., Chambers Street).
DISEASES OF THE EAR, Tuesdays and Frids. (with Clinical Instruction at Hospital, 6 Cambridge St., Lothian Rd., Mon., Thurs., and Sat., 12 noon), 9 a.m.		DR KIRK DUNCANSON (6 Cambridge Street).

* Under the Superintendence of the Lecturers on Clinical Medicine and Surgery.

Diseases of the Ear and Throat, including Laryngoscopic and Rhinoscopic Diagnosis and Treatment—30 Lectures, daily, and Clinical Instruction at Royal Infirmary, beginning 11th Nov., ...	4 p.m.	Dr P. M'Bride (Surgeons' Hall).
Diseases of the Skin, Clinical Instruction on Weds. and Sats., .	10 a.m.	Dr Allan Jamieson (Royal Infirmary).
Diseases of Children, Clinical Lectures, Three Months' Course, commencing November, . .	10 a.m.	Mr Joseph Bell and Dr Burn Murdoch (Sick Children's Hos.).
Diseases of Infancy and Childhood, Clinical Course, ...	10.30 a.m.	Dr John Thomson (New Tow Dispensary).
Vaccination, with special reference to Public Vaccination in England (Wednesdays and Saturdays),	12 noon and 1 p.m.	Dr Husband (Royal Dispensary).
Vaccination, with special reference to Public Vaccination in England (Thursdays), . . .	3 p.m.	Dr J. B. Buist (West. Dispensary.)
Practice of Vaccination, Mondays,	4 p.m.	Dr J. B. Buist (Cowgate Dispensary).
Natural History, Course of Lectures, . Practical Class and Laboratory Work, . . . Series of Demonstrations, . .	3 p.m.	Mr J. Arthur Thomson (Park Place).
Diseases of the Eye (Tues. and Thur.),	4 p.m.	Dr John Robertson (Minto Ho., Chambers Street).
Diseases of the Eye, 30 Lectures, beginning in November, ...		Mr George Berry (Edinburgh Eye Dispensary).
Diseases of the Chest, Clinical Course (Tuesdays and Thursdays),	4 to 6 p.m.	Dr A. W. Philip (Dispensary, 13 Bank Street).
Systematic Gynæcology, . . .	5 p.m.	Dr Halliday Croom (Minto Ho., Chambers Street).
Practical Midwifery and Clinical Gynæcology (Fridays), . . .	1 p.m.	Dr Peter Young (Royal Dispensary).
Clinical Midwifery (daily at suitable hours, February to May), ...		Dr Berry Hart (Royal Maternity Hospital).
Clinical Gynæcology. Mon. and Thur.,	4.30 p.m.	Dr Brewis (New Town Dispensary).
Diseases of the Tropics and Climatology (Mon., Wed. and Fri.),	5 p.m.	Dr R. W. Felkin (Park Place).
Classes for Women. Practical Anatomy, Lectures and Demonstrations, .	9 a.m. to 5 p.m.	Dr J. Symington (30 Chambers Street).
Practical Anatomy, Lectures and Demonstrations, .	9 a.m.	Dr Alfred W. Hughes (Surgeon Square).
Chemistry—Lectures,	11 a.m.	Mr Ivison Macadam.
Clinical Surgery, (Mon. and Thurs.),	3 p.m.	Dr W. Finlay (Leith Hospital).

* Under the superintendence of the Lecturers on Clinical Medicine and Surgery.

Fees.—For a *First* Course of Lectures, £3, 5s.; for a *Second*, £2, 4s.; *Perpetual*, £5, 5s. —To those who have already attended a *First* Course in Edinburgh the *Perpetual* Fee is £2, 4s. Practical Anatomy (Six Months' Course), £3, 3s.; Course of Demonstrations, £2, 2s.; *Perpetual*, £4, 4s. Practical Anatomy, with Course of Demonstrations, £4, 4s. Practical Chemistry, £3, 3s.; Analytical Chemistry, £2 a Month, £5 for Three Months, or £10 for Six Months. Practical Materia Medica, including Practical Pharmacy, Diseases of the Ear, Diseases of the Skin, and Diseases of Children, and Diseases of the Tropics and Climatology, *each* £2, 2s. Vaccination, £1, 1s. For *SUMMER COURSES* of Clinical Surgery and Clinical Medicine, *each* £2, 4s.; Practical Anatomy, including Anatomical Demonstrations, Operative Surgery and Practical Medicine and Medical Diagnosis, *each* £2, 2s.; Insanity and Surgical Anatomy, each £1, 1s.

The *minimum cost* of the Education in this School of Medicine for the **Triple Qualification** of Physician and Surgeon from the **Royal Colleges of Physicians and Surgeons of Edinburgh and the Faculty of Physicians and Surgeons of Glasgow**, including the Fees for the Joint Examinations, is £100, which is payable by yearly instalments during the period of Study.

** *The appointment of Resident Physician to the wards in the Royal Infirmary under the care of the Ordinary Physicians is open only to those members of their clinical class who have clerked in their wards for at least six months. Six Residentships are appointed during the year, for a period of six months each.*

STEVENSON MACADAM, *Secretary*

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Fairchild Digestive Ferments.—The Purest and Best, viz.:—Zymine (Extractum Pancreatis), Pepsin in Scales and in Powder, Zymine Tabloids, Zymine Comp. Tabloids, Zymine Peptonising Powders.

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Hypodermic Tabloids.—Containing Alkaloids in the usual doses, compressed and soluble. Will keep perfectly in any climate.

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"Lanoline" Toilet Soap, Cold Cream, Pomade, and Toilet "Lanoline."—For the Preservation and Health of the Skin and Hair.

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Zymine Peptonising Powders (FAIRCHILD).—One tube added to a pint of cows' milk so predigests it that it will no longer form a curd to irritate an inflame the infant or invalid stomach. They render cows' milk precisely like mothers' milk. "The introduction of which has probably done more than any other therapeutic measure of recent times to lessen infant mortality."—*British Medical Journal.*

These Classes qualify for Graduation in Medicine and Science, at the University of Edinburgh, and the Royal Colleges of Physicians and Surgeons.

CHEMISTRY CLASSES

FOR STUDENTS OF

Medicine & Science at School of Medicine, 11 Chambers St.

SYSTEMATIC CHEMISTRY.

Mr J. RYMER PATERSON, B.Sc., F.C.S., &c., will commence his Winter Course on October 14th, 1890, at 10 A.M. The Lectures will be fully illustrated by Specimens, Diagrams, Experiments, and Lantern Demonstrations.

PRACTICAL CHEMISTRY.

The usual Spring and Summer Courses are held. Each Course includes wet and dry testing, urine testing, &c.

A Bursary of £20 will be competed for in March. Open to Members of above Classes.

ANALYTICAL CHEMISTRY.

The Laboratory is open daily from 9 A.M. to 5 P.M. for general work.

The following Special Courses may be taken out :—

(*a*) Inorganic Analysis (for B.Sc. in Chemistry).
(*b*) Food Analysis (for B.Sc. in Public Health).
(*c*) Technical Analysis (Various).

Tutorial Classes will be conducted for the First Prof. Examinations. These are free to Members of Practical or Theoretical Courses.

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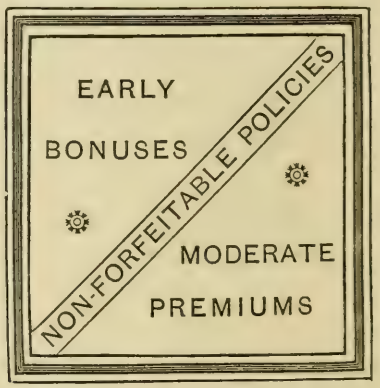

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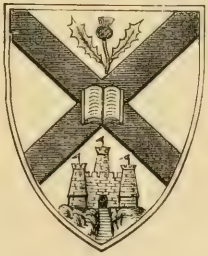

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The Calendar.

1890—MAY, 31 DAYS.

1	Th	SUMMER SESSION OPENS. *Clin. Surgery Exams. begin.*
2	Fr	*Clinical Medicine Exams. begin.*
3	Sa	
4	S	
5	M	
6	Tu	
7	W	
8	Th	
9	Fr	
10	Sa	
11	S	
12	M	*Meeting of Universiy Court at* 4 P.M.
13	Tu	LAW CLASSES OPEN. Court of Session sits.
14	W	
15	Th	Whitsunday Term.
16	Fr	
17	Sa	
18	S	
19	M	*Fellowships, Scholarships, Bursaries, paid by Factor*
20	Tu	
21	W	
22	Th	HOLIDAY. General Assembly meets.
23	Fr	
24	Sa	Queen Victoria born, 1819.
25	S	
26	M	
27	Tu	
28	W	
29	Th	
30	Fr	*Meeting of Senatus Academicus at* 3 P.M.
31	Sa	

1890—JUNE, 30 DAYS.

1	S	
2	M	
3	Tu	*University Local Examinations begin.*
4	W	
5	Th	
6	Fr	
7	Sa	
8	S	
9	M	*Meeting of University Court at* 4 P.M.
10	Tu	
11	W	
12	Th	
13	Fr	
14	Sa	
15	S	
16	M	*Final Prof. Exam. in Med.—Surg.* 10; *Midwif.* 1.
17	Tu	*Do. do.—Prac. of Phys.*, 10; *Med. Jur.*, 1.
18	W	*Final Prof. Oral Exams. begin.*
19	Th	
20	Fr	*Accession of the Queen*, 1837.
21	Sa	
22	S	
23	M	
24	Tu	Midsummer Day.
25	W	
26	Th	
27	Fr	*Meeting of Senatus Academicus at* 3 P.M.
28	Sa	*Queen's Coronation*, 1838.
29	S	
30	M	*Candidates for Law Graduation Examinations to intimate their names, show their Certificates, and pay their Fees.*

1890—JULY, 31 DAYS.

1	Tu	
2	W	
3	Th	*Names of Candidates for 2d Professional Exam. to be given in, Certificates shown, and Fees paid.*
4	Fr	
5	Sa	*Last day for Names of Candidates for First Prof. Exam. in Med. and for Exams. in Science, to be given in, Certificates shown, and Fees paid, and for Names and Subjects for M.A. with Honours in Nat. Science to be intimated. Exam. for Deg. in Law: Scots Law,* 10; *Const. Law and Hist.,* 3. *Second B.Sc. in Public Health: Medicine,* 11; *Sanitary Law and Vital Statistics,* 2.
6	S	
7	M	
8	Tu	*Exam. for Deg. in Law: Civil Law,* 10; *Const. Law and Hist.,* 3. *Second B.Sc.: Practical Sanitation,* 11 *and* 2.
9	W	*Exam. for Deg. in Law: Conveyancing,* 10; *Political Economy,* 10; *Medical Jurisprudence,* 3. *Second B.Sc. Public Health, Oral Examination.*
10	Th	*Exam. for Deg. in Law: Public Law,* 10. *Second B.Sc. Public Health, Oral Examination.*
11	Fr	*Second Prof. Exam. in Med.—Anat.,* 10; *Physiol.,* 1.
12	Sa	*Do. do. Materia Medica,* 10; *Pathol.,* 1.
13	S	
14	M	*Meeting of University Court at* 4 P.M.
15	Tu	*Last day for payment of Stamp Duty for M.D. Diplomas. Second Prof. Oral Exams. begin.*
16	W	
17	Th	
18	Fr	*Summer Session ends.*
19	Sa	
20	S	*First Prof. in Med., First and Second B.Sc., and M.A. with Hon. in Nat. Sc. Exams.: Chem.,* 11; *Physiol.,* 11; *Laboratory Work,* 11; *Bot.,* 2; *Physics,* 2.
21	M	
22	Tu	*First Prof. in Med., First and Second B.Sc., and M.A. with Hon. in Nat. Sc. Exams.: Nat. Hist.,* 11; *Geology,* 2. *First Prof. Oral Exams. begin.*
23	W	*Prac. Chem. Exam., for First Prof. and First B.Sc. begins.*
24	Th	*Meeting of Senatus Academicus at* 3 P.M. (1) *Candidates for Degrees to be reported and approved;* (2) *Class Lists and Returns for Court, &c., to be given in.*
25	Fr	
26	Sa	
27	S	
28	M	
29	Tu	
30	W	
31	Th	

1890—AUGUST, 31 DAYS.

1	Fr	GRADUATION CEREMONIAL IN LAW AND MEDICINE AT 10 A.M. Lammas Day.
2	Sa	*University Library closed till Monday, 1st September, both days included.*
3	S	
4	M	
5	Tu	
6	W	
7	Th	
8	Fr	
9	Sa	
10	S	
11	M	
12	Tu	
13	W	
14	Th	
15	Fr	
16	Sa	
17	S	
18	M	
19	Tu	
20	W	
21	Th	
22	Fr	
23	Sa	
24	S	
25	M	
26	Tu	
27	W	
28	Th	
29	Fr	
30	Sa	
31	S	

1890—SEPTEMBER, 30 DAYS.

1	M	*Names of Candidates for Ferguson Scholarships to be given in. University Library opened.*
2	Tu	
3	W	
4	Th	
5	Fr	
6	Sa	
7	S	
8	M	
9	Tu	
10	W	
11	Th	
12	Fr	
13	Sa	
14	S	
15	M	Edinburgh Holiday.
16	Tu	
17	W	
18	Th	
19	Fr	
20	Sa	
21	S	
22	M	
23	Tu	
24	W	
25	Th	
26	Fr	
27	Sa	
28	S	
29	M	
30	Tu	

1890—OCTOBER, 31 DAYS.

1	W	ANNUS ACADEMICUS *begins. First day for payment of* MATRICULATION *fee. Last day for Names for Preliminary Examinations in Medicine and Science to be given in, and Fees paid. Last day for entering for Preferential Bursaries. Practical Anatomy and Public Health Laboratory Courses begin. Exams. for Ferguson Scholarships begin.*
2	Th	
3	Fr	
4	Sa	
5	S	
6	M	*Annual Inspection of Library. Last day for Names of Candidates for Degrees in Arts and Science, for B.L. Preliminary and for L.A. Certificates to be given in, Certificates shown, and Fees paid.*
7	Tu	*Prelim. Exam. in Arts for Med. and Sc. Degrees: Arith.*, 9 A.M.; *Math.*, 11.30; *Higher Math.*, 2.
8	W	*Prelim. Do.: Eng.*, 9; *Nat. Phil.*, 11.30; *Mech.* 2.
9	Th	*Prelim. Do.: Lat.*, 9; *Logic*, 11.30; *Mor. Phil.*, 2.
10	Fr	*Do. Do.: Greek*, 9; *French*, 11.30; *German*, 2. *Last day for entering for open Bursaries in Arts.*
11	Sa	
12	S	
13	M	*Meeting of University Court at* 4 P.M. *Meeting of Senatus Academicus at* 2 P.M.: (1) *Standing Committees to be appointed;* (2) *Names of Professors' Assistants to be submitted for approval.*
14	Tu	CLASSES IN FACULTY OF MEDICINE OPEN. *Pass Examinations for M.A. and for First B.Sc.: Latin*, 9 *and* 11.30; *Mathematics*, 2.30.
15	W	CLASSES IN FACULTY OF LAW OPEN. *Pass Examinations for M.A. and for First B.Sc.: Mathematics*, 9; *Greek*, 11.30 *and* 2.30. *Prely. French and German for B.L.*, 11.30 *and* 2.30.
16	Th	*Pass Examinations for M.A. and for First and Second B.Sc.: Logic and Psychology*, 9; *Natural Philosophy*, 1; *Physics*, 1; *Chemistry as applied to Agriculture*, 9; *Veterinary Hygiene*, 1.

17	Fr	*Pass Examinations for M.A. and First and Second B.Sc.: Moral Philosophy*, 9; *Rhetoric*, 1; *Agriculture*, 9; *Economics*, 1. *Examinations for Heriot Bursaries: French*, 9; *German*, 1.
18	Sa	ENTRANCE EXAMINATIONS *for* CURRICULUM *of* THREE SESSIONS, *and for* OPEN BURSARIES IN ARTS, *Latin*, 9; *Greek*, 1.
19	S	
20	M	*Entrance Examination in Mathematics and Exam. for open Bursaries, second day. Mathematics*, 9; *English*, 1. *Last day for Names of Candidates for Degrees in Law to be given in, Certificates shown, and Fees paid.*
21	Tu	*Exam. in Mathematics for John Welsh and Heriot Bursaries*, 9. *Last day for Names of Candidates for B.D. to be given in, Certificates shown, and Fees paid.*
22	W	CLASSES IN FACULTY OF ARTS OPEN.
23	Th	
24	Fr	*Names of Candidates for 2nd B.Sc. in Engineering to be given in, Certificates shown, and Fees paid.*
25	Sa	*Examination of Preferential Candidates for Bursaries in Arts at* 9 A.M. *and* 1 P.M.
26	S	
27	M	*Exam. for Degrees in Law: Scots Law*, 10; *Const. Law and History*, 3.
28	Tu	*Examination for B.D.: Hebrew*, 10; *Apol. Theol.*, 2. *Exam. for Deg. in Law: Civil Law*, 10; *Const. Law and Hist.*, 3.
29	W	*Examination for B.D.: Eccles. Hist.*, 10; *Syst. Theol.*, 2. *Exam. for Deg. in Law: Conveyancing*, 10; *Pol. Econ.*, 10; *Med. Jurisp.*, 3.
30	Th	*Exam. for B.D.: Bib. Crit.*, 10. *Exam. for Deg. in Law: Public Law*, 10.
31	Fr	*Meeting of General Council, at 3 o'clock.*

1890—NOVEMBER, 30 DAYS.

1	Sa	
2	S	
3	M	
4	Tu	DIVINITY CLASSES OPEN. *Introductory Address in Faculty of Divinity by Rev. Prof. Flint, D.D.*, 12. *Dynamics for Second B.Sc. in Engineering*, 1.
5	W	*Second B.Sc.: Engineering and Drawing*, 11 *and* 2.
6	Th	*Do.* *do.* *do.*, 11 *and* 2.
7	Fr	*Do.* *do.* *do.*, 11 *and* 2.
8	Sa	
9	S	
10	M	*Meeting of University Court at* 4 P.M. *Appointment of Class Assistants to be submitted for approval.*
11	Tu	Martinmas Term. *Certificates for Bursaries in Arts granted by Dean.*
12	W	
13	Th	
14	Fr	*Fellowships, Scholarships, Bursaries paid by Factor. Examinations for Divinity Bursaries: 1st day*, 10.
15	Sa	ELECTION OF RECTOR. *Examinations for Divinity Bursaries: 2d day*, 10.
16	S	
17	M	
18	Tu	
19	W	
20	Th	
21	Fr	
22	Sa	
23	S	
24	M	
25	Tu	
26	W	
27	Th	
28	Fr	
29	S	*Registration of Members of General Council for Register of* 1891 *ends. Meeting of Senatus Academicus at* 2 P.M.: (1) *Reports on Bursaries and Entrance Exams.*; (2) *House Committee to submit Estimates for year.*
30	S	

1890—DECEMBER, 31 DAYS.

1	M	*Names of Candidates for Fellowships and Scholarships to be intimated.*
2	Tu	
3	W	
4	Th	
5	Fr	
6	Sa	
7	S	
8	M	*Meeting of University Court at* 4 P.M.
9	Tu	
10	W	
11	Th	
12	Fr	*Meeting of Senatus at* 2 P.M.: (1) *Election of Managers for Royal Infirmary;* (2) *Report of Finance Committee;* (3) *Report to Widows' Fund.*
13	Sa	
14	S	
15	M	
16	Tu	
17	W	
18	Th	*Classes meet for last time before Christmas Vacation. Examination for Fellowships and Scholarships in Arts begins at* 10 *o'clock.*
19	Fr	
20	Sa	
21	S	
22	M	
23	Tu	
24	W	*Library closed.*
25	Th	CHRISTMAS DAY.
26	Fr	
27	Sa	
28	S	
29	M	
30	Tu	
31	W	

1891—JANUARY, 31 DAYS.

1	T	
2	Fr	
3	Sa	
4	S	
5	M	*Library opened.*
6	Tu	*Classes meet after Christmas Vacation.*
7	W	
8	Th	
9	Fr	
10	Sa	
11	S	
12	M	*Meeting of University Court at* 4 P.M. *Appointment of Examiners in Medicine and in Science.*
13	Tu	
14	W	
15	Th	
16	Fr	
17	Sa	
18	S	
19	M	
20	Tu	
21	W	
22	Th	
23	Fr	
24	Sa	
25	S	
26	M	*Meeting of University Court for hearing Registration Appeals.*
27	Tu	
28	W	
29	Th	
30	Fr	
31	Sa	*Meeting of Senatus Academicus at* 2 P.M.: (1) *Annual Reports on Museums and Univ. Library to be given in;* (2) *Names for Honorary Degrees proposed;* (3) *Arrangements for Summer and Winter Sessions,* 1891-92.

1891—FEBRUARY, 28 DAYS.

1	S	
2	M	
3	Tu	
4	W	
5	Th	
6	Fr	
7	Sa	
8	S	
9	M	*Meeting of University Court at* 4 P.M. *Holiday in Faculty of Arts.*
10	Tu	
11	W	
12	Th	
13	Fr	*Reid Commemoration Concert.*
14	Sa	
15	S	
16	M	
17	Tu	
18	W	
19	Th	
20	Fr	
21	Sa	
22	S	
23	M	*Last day for Names for Prelim. Exams. in Med. and in Science to be given in, and Fees paid.*
24	Tu	
25	W	
26	Th	
27	Fr	
28	Sa	*Meeting of Senatus Academicus at* 2 P.M.*:* (1) *Report on Honorary Degrees in Divinity and Law;* (2) *Resolution to Elect Member of General Assembly.*

1891—MARCH, 31 DAYS.

1	S	
2	M	
3	Tu	*Prelim. Exam. in Arts for Degrees in Med. and Science: Arith.*, 9; *Math.*, 11.30; *Higher Math.*, 2.
4	W	*Do. English*, 9 *o'clock; Nat. Phil.*, 11.30; *Mechanics*, 2.
5	Th	*Do. Latin*, 9 *o'clock; Logic*, 11.30; *Moral Philosophy*, 2.
6	Fr	*Do. Greek*, 9 *o'clock; French*, 11.30; *German*, 2.
7	Sa	
8	S	
9	M	*Meeting of University Court at* 4. P.M. *Last day for Names for First Prof. Exam., and for Exams. for Degrees in Science to be given in, Certificates shown, and Fees paid. Names of Candidates and subjects of Exam. for M.A. with Honours in Natural Science to be intimated.*
10	Tu	
11	W	
12	Th	
13	Fr	
14	Sa	*Meeting of Preliminary Examiners.*
15	S	
16	M	
17	Tu	*Names for B.D. Exams. to be given in, Certificates shown, and Fees paid.*
18	W	
19	Th	

20	Fr	*Last day for Names of Candidates for Degrees in Arts, for Schoolmaster's Diploma, for Literate in Arts, and for B.L. Preliminary to be given in, and Fees paid. Classes in Faculties of Div., Law, and Med. close. Names of Candidates for Second Prof. Exam. to be given in, Certificates shown, and Fees paid.*
21	Sa	
22	S	
23	M	*First Prof. in Med., First and Second B.Sc. and M.A. Honours in Nat. Sc. Exams.: Chemistry*, 11; *Physiol.*, 11; *Bot.*, 2. *First B.Sc. in Public Health begins. Laboratory Work*, 11; *Physics*, 2.
24	Tu	*First Prof., First and Second B.Sc. and M.A. with Honours in Nat. Sc. Exams.: Nat. Hist.*, 11; *Geology*, 2. *Oral Exams. begin.*
25	W	*Exam. for D.Sc. in Semitic Philology begins. B.D. Exams.: Heb.*, 10; *Apol. Theol.*, 2. *Prac. Chem. Exams. for Med. and Sc. begin.*
26	Th	*B.D. Exams.: Eccles. Hist.*, 10; *Syst. Theol.*, 2.
27	Fr	GOOD FRIDAY—HOLIDAY.
28	Sa	*Meeting of Senatus Academicus at* 2 P.M.*:* (1) *Member of Assembly to be elected;* (2) *Acceptances of Honorary Degrees;* (3) *Class Lists and Returns for Court to be given in. B.D. Exam.: Bib. Crit.*, 10; *Exams. for Schoolmaster's Diploma*, 10 *and* 2; *Education for L.A.*, 10.
29	S	EASTER SUNDAY.
30	M	*Second Prof. Exams.: Anat.* 10; *Physiol.*, 1.
31	Tu	*Second Prof. and First and Second B.Sc. in Agriculture Exams.: Materia Medica*, 10; *Pathology*, 1; *Agriculture*, 10; *Agricultural Chemistry*, 10; *Veterinary Hygiene*, 1; *Economics*, 1.

1891—APRIL, 30 DAYS.

1	W	*Second Professional Oral Exams. begin.*
2	Th	*Classes in the Faculty of Arts close.*
3	Fr	
4	Sa	*Certificates, &c., for M.A. Exams. to be shown before one p.m.*
5	S	
6	M	*Pass Examinations for M.A. and for First and Second B.Sc.: Latin,* 9 *and* 11.30 ; *Mathematics,* 3 ; *Engineering and Drawing,* 11 *and* 2.
7	Tu	*Pass Examinations for M.A. and for First and Second B.Sc.: Math.,* 9 ; *Greek,* 11.30 *and* 2.30. *Preliminary French and German for B.L.,* 11.30 *and* 2.30. *Engineering and Drawing,* 11 *and* 2.
8	W	*Pass Examinations for M.A. and for First and Second B.Sc.: Logic and Psychology,* 9 ; *Nat. Philosophy,* 1 ; *Engineering and Drawing,* 11 *and* 2.
9	Th	*Pass Exams. for M.A.: Moral Phil.,* 9 ; *Rhetoric,* 1.
10	Fr	*Examinations for M.A. with Honours and for Second B.Sc.: Latin,* 9 *and* 1 ; *Logic,* 9 *and* 1 ; *Mathematics,* 9 *and* 1. *Also Exam. for D.Sc. in Mental Science and Philology,* 9.
11	Sa	*Do. do. do.—Latin,* 9 ; *Greek,* 1 ; *Logic and Metaph.,* 9 ; *Mor. Phil.,* 1 ; *Nat. Phil.,* 9 *and* 1.
12	S	
13	M	*Meeting of University Court at* 4 P.M. *Examination for M.A. with Honours: Greek,* 9 *and* 1 ; *Moral Phil.,* 9 *and* 1.
14	Tu	*Meeting of General Council at* 3 *o'clock.*

15	W	
16	Th	
17	Fr	GRADUATION CEREMONIAL IN DIVINITY, LAW, ARTS, AND SCIENCE, AT 10 A.M. COMMEMORATION SERVICE IN ST GILES'S AT 12.
18	Sa	*Library closed.*
19	S	
20	M	Edinburgh holiday.
21	Tu	*Names of Candidates for Final Exam. in Medicine to be given in, Certificates shown, and Fees paid.*
22	W	
23	Th	
24	Fr	
25	Sa	
26	S	
27	M	*Library opened.*
28	Tu	
29	W	
30	Th	

Calendar 1891-92.

MAY 1891.						
S		3	10	17	24	31
M		4	11	18	25	
Tu		5	12	19	26	
W		6	13	20	27	
Th		7	14	21	28	
Fr	1	8	15	22	29	
Sa	2	9	16	23	30	

JUNE 1891.						
S		7	14	21	28	
M	1	8	15	22	29	
Tu	2	9	16	23	30	
W	3	10	17	24		
Th	4	11	18	25		
Fr	5	12	19	26		
Sa	6	13	20	27		

JULY 1891.						
S		5	12	19	26	
M		6	13	20	27	
Tu		7	14	21	28	
W	1	8	15	22	29	
Th	2	9	16	23	30	
Fr	3	10	17	24	31	
Sa	4	11	18	25		

AUGUST 1891.						
S		2	9	16	23	30
M		3	10	17	24	31
Tu		4	11	18	25	
W		5	12	19	26	
Th		6	13	20	27	
Fr		7	14	21	28	
Sa	1	8	15	22	29	

SEPTEMBER 1891.						
S		6	13	20	27	
M		7	14	21[1]	28	
Tu	1	8	15	22	29	
W	2	9	16	23	30	
Th	3	10	17	24		
Fr	4	11	18	25		
Sa	5	12	19	26		

OCTOBER 1891.						
S		4	11	18	25	
M		5	12	19	26	
Tu		6	13	20	27	
W		7	14	21	28	
Th	1	8	15	22	29	
Fr	2	9	16	23	30	
Sa	3	10	17	24	31	

NOVEMBER 1891.						
S	1	8	15	22	29	
M	2	9	16	23	30	
Tu	3	10	17	24		
W	4	11	18	25		
Th	5	12	19	26		
Fr	6	13	20	27		
Sa	7	14	21	28		

DECEMBER 1891.						
S		6	13	20	27	
M		7	14	21	28	
Tu	1	8	15	22	29	
W	2	9	16	23	30	
Th	3	10	17	24	31	
Fr	4	11	18	25[2]		
Sa	5	12	19	26		

JANUARY 1892.						
S		3	10	17	24	31
M		4	11	18	25	
Tu		5	12	19	26	
W		6	13	20	27	
Th		7	14	21	28	
Fr	1	8	15	22	29	
Sa	2	9	16	23	30	

FEBRUARY 1892.						
S		7	14	21	28	
M	1	8[3]	15	22	29	
Tu	2	9	16	23		
W	3	10	17	24		
Th	4	11	18	25		
Fr	5	12	19	26		
Sa	6	13[4]	20	27		

MARCH 1892.						
S		6	13	20	27	
M		7	14	21	28	
Tu	1	8	15	22	29	
W	2	9	16	23	30	
Th	3	10	17	24	31	
Fr	4	11	18	25		
Sa	5	12	19	26		

APRIL 1892.						
S		3	10	17	24	
M		4	11	18[1]	25	
Tu		5	12	19	26	
W		6	13	20	27	
Th		7	14	21	28	
Fr	1	8	15[5]	22	29	
Sa	2	9	16	23	30	

[1] Edinburgh Holiday. [2] Christmas Day. [3] Holiday in Faculty of Arts.
[4] Reid Concert. [5] Good Friday.

ADDRESSES OF THE PRINCIPAL AND PROFESSORS.

Principal Sir William Muir, Dean Park House.
Professor Sellar, 15 Buckingham Terrace.
„ Chrystal, 5 Belgrave Crescent.
„ Butcher, 27 Palmerston Place.
„ Campbell Fraser, Gorton House, Hawthornden.
„ Calderwood, Craigrowan, Napier Road, Merchiston.
„ Tait, 38 George Square.
„ Masson, 58 Great King Street.
„ Copeland, 15 Royal Terrace.
„ Wallace, Brunstane House, Joppa.
„ Sir Herbert S. Oakeley, Park Place.
„ Eggeling, 15 Hatton Place, Grange.
„ Armstrong, The University.
„ Geikie, 31 Merchiston Avenue.
„ Nicholson, Eden Lodge, Newbattle Terrace, Morningside.
„ Laurie, Nairne Lodge, Duddingston.
„ Baldwin Brown, 3 Rosebery Crescent.
„ Mackinnon, 1 Merchiston Place.
Rev. Professor Flint, Johnstone Lodge, Craigmillar Park.
„ Adams, Victoria Park, Trinity.
„ Taylor, 6 Greenhill Park.
„ Charteris, Cameron House, Dalkeith Road.
Professor Kirkpatrick, 5 Murrayfield.
„ Sir Douglas Maclagan, 28 Heriot Row.
„ Fraser-Tytler, 22 Young Street.
„ Rankine, 23 Ainslie Place.
„ Goudy, 2 Drummond Place.
„ Sir Ludovic Grant, Bart., 17 Drummond Place.
„ Rutherford, 14 Douglas Crescent.
„ Grainger Stewart, 19 Charlotte Square.
„ Sir Wm. Turner, 6 Eton Terrace.
„ Crum Brown, 8 Belgrave Crescent.

Professor Simpson, 52 Queen Street.
„ Cossar Ewart, 2 Belford Park.
„ Thomas R. Fraser, 13 Drumsheugh Gardens.
„ Annandale, 34 Charlotte Square.
„ Chiene, 26 Charlotte Square.
„ Greenfield, 7 Heriot Row.
„ Bayley Balfour, Inverleith House.

PROFESSORS EMERITI.

George James Allman, LL.D., M.D., formerly Professor of Natural History; Ardmore, Parkstone, Dorset.

John Stuart Blackie, formerly Professor of Greek; 9 Douglas Crescent.

Norman Macpherson, LL.D., formerly Professor of Scots Law; 2 Randolph Cliff.

Charles Piazzi Smyth, LL.D., formerly Professor of Practical Astronomy; Clova, Ripon.

PROFESSORS RESIGNED.

Theodor Aufrecht, M.A., Ph.D., formerly Professor of Sanskrit; The University, Bonn.

Archibald Campbell-Swinton, LL.D., formerly Professor of Civil Law; Kimmerghame, Duns.

Archibald Geikie, LL.D., formerly Professor of Geology; Museum of Geology, Jermyn Street, London.

Sir Joseph Lister, Bart., LL.D., M.D., formerly Professor of Clinical Surgery; 12 Park Crescent, Portland Place, London.

Æneas James George Mackay, LL.D., Sheriff of Fife, Advocate, formerly Professor of History; 7 Albyn Place, Edinburgh.

Right Hon. Sir Lyon Playfair, K.C.B., LL.D., M.P., formerly Professor of Chemistry; 68 Onslow Gardens, South Kensington, London.

Robert Wallace, D.D., M.P., formerly Professor of Church History; 50 Finborough Road, London, S.W.

University Officers.

Chancellor.

Date of Institution.		Appointed
1859.	RIGHT HON. JOHN INGLIS, D.C.L., LL.D., Lord Justice-General	1868

Vice-Chancellor.

1859.	SIR WILLIAM MUIR, K.C.S.I., D.C.L., LL.D., Ph.D.	1885

Rector.

1859.	THE MOST HON. THE MARQUESS OF LOTHIAN, K.T., LL.D.	1887

Principal.

1582.	SIR WILLIAM MUIR, K.C.S.I., D.C.L., LL.D., Ph.D.	1885

Representative in Parliament.

1868.	M. T. STORMONTH DARLING, Q.C., M.P.	1888

University Court.

President—THE RECTOR.

THE PRINCIPAL	*Ex officio.*			
THE LORD PROVOST OF EDINBURGH	*Ex officio.*			
T. GRAHAM MURRAY, LL.D., W.S.	Assessor, nominated by Chancellor			1887
M. T. STORMONTH DARLING, M.A., Q.C., M.P.	Do.	nominated by Rector		1887
JAMES COLSTON	Do.	elected by Town Council		1886
PATRICK HERON WATSON, M.D., LL.D.	Do.	elected by General Council		1887
THE RIGHT HON. JOHN H. A. MACDONALD, C.B., LL.D., Lord Justice-Clerk	Do.	do.	do.	1889
JOHN DUNCAN, M.D.	Do.	do.	do.	1889
THOMAS M'KIE, Advocate	Do.	do.	do.	1889
A. CAMPBELL FRASER, D.C.L., LL.D., Professor of Logic and Metaphysics	Do.	elected by Senatus		1877
MALCOLM CAMPBELL TAYLOR, D.D., Professor of Ecclesiastical History	Do.	do.	do.	1889

		Appointed.
SIR WILLIAM TURNER, M.B., D.C.L., LL.D., Professor of Anatomy	Assessor, elected by Senatus.....	1889
ALEXANDER CRUM BROWN, M.D., D.Sc., Professor of Chemistry	Do. do. do.	1889

Secretary—JOHN CHRISTISON, W.S.
Clerk—THOMAS GILBERT.
Assistant Clerk—JAMES DOWIE.
Secretary's Clerk—GEORGE CAMPBELL.

Curators of Patronage.

PRINCIPAL SIR WILLIAM MUIR	Elected by University Court ..	Dec. 1887
T. GRAHAM MURRAY, LL.D., W.S.	Elected by do.	Dec. 1884
RIGHT HON. J. H. A. MACDONALD, C.B., LL.D., Lord Justice-Clerk.....	Elected by do.	Feb. 1890
RIGHT HON. JOHN BOYD, Lord Provost.....	Elected by Town Council	Dec. 1876
JOHN CLAPPERTON.....	Elected by do.	June 1885
SIR THOS. CLARK, Bart....	Elected by do.	Jan. 1886
JAMES M'INTOSH, S.S.C.....	Elected by do.	June 1889

Secretary—R. HERBERT JOHNSTON, W.S., 66 Frederick Street.

Senatus Academicus.

President—THE PRINCIPAL. **Secretary**—PROFESSOR KIRKPATRICK.

FACULTY OF ARTS.

Dean—ALEXANDER CAMPBELL FRASER, Hon. D.C.L. (Oxon.), LL.D. (Glasg.), Professor of Logic and Metaphysics.

Date of Institution.	Chairs.	Professors.	Appointed.	Patrons.
1583	**Humanity**.....	WILLIAM YOUNG SELLAR, LL.D.	1863	Lds. of Ses., Cur., Fac. of Adv., and W.S. Soc. [1]
1583	**Greek**.....	SAMUEL HENRY BUTCHER, LL.D.	1882	Curators.
1583	**Mathematics**.....	GEO. CHRYSTAL, LL.D...	1879	Curators.
1583	**Logic & Metaphysics**.	ALEXANDER CAMPBELL FRASER, D.C.L., LL.D.	1856	Curators.
1583	**Moral Philosophy**.....	HENRY CALDERWOOD, LL.D.	1868	Curators.
1583	**Natural Philosophy**...	PETER GUTHRIE TAIT, M.A., D.Sc.	1860	Curators.
1760	**Rhetoric and English Literature**	DAVID MASSON, LL.D...	1865	Crown.
1719	**History**	JOHN KIRKPATRICK, LL.B., LL.D.	1881	Fac. of Adv., & Cur.
1786	**Practical Astronomy**	RALPH COPELAND, Ph.D.	1889	Crown.

[1] The Judges of the Court of Session nominate two Delegates, the Curators two, the Faculty of Advocates one, and the Society of Writers to the Signet one. These six Delegates appoint the Professor, who receives his Commission from the Curators.

Date of Institution.	Chairs.	Professors.	Appointed.	Patrons.
1790	**Agriculture & Rural Economy**	ROBERT WALLACE.....	1885	Lds. of Sess., Cur., & Univ. Ct.[1]
1839	**Music**[2].....	Sir HERBERT OAKELEY, Mus. Doc., LL.D., D.C.L.	1865	Univ. Court.
1862	**Sanskrit and Comparative Philology**[3]	JULIUS EGGELING, Ph.D.	1875	Crown.
1868	**Engineering**[4].....	GEORGE FREDERICK ARMSTRONG, M.A., C.E.	1885	Crown.
1871	**Geology**[5].....	JAMES GEIKIE, LL.D....	1882	Crown.
1871	**Commercial & Political Economy & Mercantile Law**[6]	JOSEPH SHIELD NICHOLSON, M.A., D.Sc.	1880	Cur., & Merch. Co.
1876	**Theory, History, and Practice of Education**[7]	SIMON SOMERVILLE LAURIE, LL.D.	1876	Bell Trustees.
1879	**Fine Art**[8].....	GERARD BALDWIN BROWN, M.A.	1880	Univ. Ct., Pres. R. Scott. Acad.
1882	**Celtic Languages, History, Literature, and Antiquities**[9]	DONALD MACKINNON, M.A.	1882	Cur., & Emeritus Prof. Blackie.

FACULTY OF DIVINITY.

Dean—MALCOLM CAMPBELL TAYLOR, D.D., Professor of Ecclesiastical History.

1583	**Divinity**.....	ROBERT FLINT, D.D.....	1876	Curators.
1642	**Hebrew and Oriental Languages**	DAVID LAIRD ADAMS, M.A., B.D., D.D.	1880	Curators.
1694	**Ecclesiastical History**	MALCOLM CAMPBELL TAYLOR, D.D.	1877	Crown.
1846	**Biblical Criticism & Biblical Antiquities**	ARCHIBALD HAMILTON CHARTERIS, D.D.	1868	Crown.

FACULTY OF LAW.

Dean—JOHN KIRKPATRICK, M.A., LL.B., LL.D., Dr Jur., Professor of History.

1707	**Public Law**.....	Sir LUDOVIC GRANT, Bart., B.A.	1890	Crown.
1710	**Civil Law**.....	HENRY GOUDY, LL.B....	1889	Fac. of Adv., and Cur.[10]

[1] The Professor is elected by nine Delegates, three chosen by the Judges of the Court of Session, three by the Curators, and three by the University Court.

[2] This Chair was endowed by General John Reid.

[3] This Chair was endowed by John Muir, LL.D. (Edin.), D.C.L. (Oxon.), late of the Bengal Civil Service, and by a Parliamentary vote of £200.

[4] This Chair was endowed in 1868 by Sir David Baxter, and by an annual vote of Parliament of £200.

[5] This Chair was endowed in 1871 by a sum of £6000 mortified by Sir Roderick Impey Murchison, Bart., and by an annual vote by Parliament of £200.

[6] This Chair was endowed in 1871 by the Merchant Company of Edinburgh, and other Governors of George Watson's and Daniel Stewart's Hospitals, who have granted a salary of £450 as the endowment.

[7] This Chair was endowed by the Trustees of the late Dr A. Bell, who granted a sum of £6000 for the purpose, to which a further sum of £4500 out of the Bell Fund was added by the Educational Endowments Commission in 1887.

[8] This Chair was endowed by Mr H. G. and Miss Frances Watson.

[9] Endowed with a sum of £14,000, raised by public subscription.

[10] For this Chair the Faculty of Advocates send to the Curators a leet of two, of whom the Curators must choose one.

Date of Institution.	Chairs.	Professors.	Appointed.	Patrons.
1719	**History**	JOHN KIRKPATRICK, LL.B., LL.D.	1881	Fac. of Adv., and Cur.[1]
1722	**Scots Law**	JOHN RANKINE, M.A.	1888	Do.[1]
1807	**Medical Jurisprudence and Police**	Sir DOUGLAS MACLAGAN, M.D.	1862	Crown.
1825	**Conveyancing**[2]	JAMES STUART FRASER-TYTLER, LL.D.	1866	Cur., Dep.-Kpr. and W.S. Soc.[3]
1871	**Commercial and Political Economy and Mercantile Law**	JOSEPH SHIELD NICHOLSON, M.A., D.Sc.	1880	Cur., & Merch. Co.

FACULTY OF MEDICINE.

Dean—THOMAS RICHARD FRASER, M.D., F.R.S., Professor of Materia Medica.

1676	**Botany**	BAYLEY BALFOUR, M.D.	1888	Curators.
1685	**Institutes of Medicine**	WM. RUTHERFORD, M.D.	1874	Curators.
1685	**Practice of Physic**	THOMAS GRAINGER STEWART, M.D.	1876	Curators.
1705	**Anatomy**	Sir WM. TURNER, M.B.	1867	Curators.
1713	**Chemistry & Chemical Pharmacy**	ALEX. CRUM BROWN, M.D.	1869	Curators.
726	**Midwifery & Diseases of Women & Children**	ALEX. RUSSELL SIMPSON, M.D.	1870	Curators.
	Clinical Medicine	THOMAS GRAINGER STEWART, M.D.	1876	
		THOMAS RICHARD FRASER, M.D.	1877	
		WILLIAM SMITH GREENFIELD, M.D.	1881	
		Diseases of Women—ALEXANDER RUSSELL SIMPSON, M.D.	1870	
1767	**Natural History**	JAMES COSSAR EWART, M.D.	1882	Crown.
1768	**Materia Medica**	THOMAS RICHARD FRASER, M.D.	1877	Curators.
1803	**Clinical Surgery**	THOS. ANNANDALE, M.D.	1877	Crown.
1807	**Medical Jurisprudence**	Sir DOUGLAS MACLAGAN, M.D.	1862	Crown.
1831	**Surgery**	JOHN CHIENE, M.D.	1882	Curators.
1831	**General Pathology**	WILLIAM SMITH GREENFIELD, M.D.	1881	Curators.

UNIVERSITY LECTURERS.

Balfour Lecturer in Philosophy	ANDREW SETH, M.A.	1883.
Gifford Lecturer on Natural Theology	Sir GEORGE G. STOKES, Bart., Lucasian Professor of Mathematics, University of Cambridge.	1890.
Forestry	WILLIAM SOMERVILLE, B.Sc., D. (Econ.	1889.
Civil and Criminal Procedure	JOHN P. COLDSTREAM, W.S.	1884.

[1] For each of these Chairs the Faculty of Advocates send to the Curators a leet of two, of whom the Curators must choose one.

[2] Endowed by the Society of Writers to the Signet.

[3] The Election is by—(1) Two Delegates from the Curators; (2) Two from the Society of Writers to the Signet; and (3) The Deputy-Keeper of the Signet.

Mental Diseases	Thomas S. Clouston, M.D. 1879.
Diseases of the Eye	Douglas Argyll Robertson, M.D. 1883.
Clinical Instruction on Diseases of Children	James Carmichael, M.D. 1885. John Playfair, M.B. 1889.
Comparative Embryology	George Brook. 1885.
Philosophy of Nat. History	George J. Romanes, M.A., LL.D. 1886.

ASSISTANTS TO PROFESSORS.

IN THE FACULTY OF ARTS.

Humanity	Francis R. Jamieson, M.A.
Greek	John A. Smith, M.A. (Edin.), B.A. (Oxon.)
Mathematics	R. E. Allardice, M.A.
Logic and Metaphysics	R. P. Hardie, M.A. (Edin.), B.A. (Oxon.)
Moral Philosophy	W. G. Smith, M.A.
Natural Philosophy	William Peddie, D.Sc.
Do. (Mechanical)	Thomas Lindsay.
Rhetoric and Eng. Liter	Geo. Gregory Smith, M.A. (Edin.), B.A. (Oxon.)
Agriculture	J. William Wallace.
Engineering	A. C. Elliott, D.Sc., C.E.
Geology	Alexander Johnston.

IN THE FACULTY OF DIVINITY.

Hebrew and Oriental Languages	John Mair, M.A.

IN THE FACULTY OF LAW.

Civil Law	James Mackintosh, M.A.
Scots Law	Ronald F. Maxwell, David Cassels.
Conveyancing	William Thomson, William Bannerman, Walter Oliphant.

IN THE FACULTY OF MEDICINE.

Botany	J. Muirhead Macfarlane, D.Sc., and others.
Institutes of Medicine	E. W. Carlier, M.B., C.M., B.Sc.; Robert Muir, M.A., M.B., C.M.
Practice of Physic	Robert A. Fleming, M.A., M.B., C.M.
Anatomy	David Hepburn, M.B., C.M.; James Musgrove, M.D.; Herbert F. Waterhouse, M.D.; Richard C. Elsworth, M.B., C.M.; Charles D. Musgrove, M.B., C.M.; James Simpson.
Chemistry	John Gibson, Ph.D.; Leonard Dobbin, Ph.D.; Hugh Marshall, D.Sc.; James Walker, D.Sc., Ph.D.; Alexander Smith, B.Sc., Ph.D.
Midwifery	John W. Ballantyne, M.D.
Clinical Medicine Tutor	J. Murdoch Brown, M.B., C.M.
Clinical Medicine (From Oct. 1889 to Oct. 1890.)	Eustace Graham Pilgrim, M.B., C.M.; James H. W. Laing, M.A., M.B., B.Sc.; Charles Gordon Gibson, M.B., C.M.; W. G. W. Sanders, M.B., C.M.; George Wilkinson, M.B., C.M.
Natural History	G. Carrington Purvis, M.D., B.Sc., and others.
Materia Medica	Joseph Tillie, M.D.; W. C. Sillar, M.B., C.M., B.Sc.
Clinical Surgery Tutor	Edward Carmichael, M.D.
Clinical Surgery	A. G. Reid, M.B., C.M, B.Sc.; A. L. Turner, M.B., C.M.

Medical Jurisprudence	CHARLES HUNTER STEWART, M.B., C.M., B.Sc.; FRANCIS MAITLAND GIBSON, B.Sc.
Surgery	D. WALLACE, M.B., C.M.; ALEX. EDINGTON, M.B., C.M.; H. J. STILES, M.B., C.M.; HERBERT DOBIE, M.B., C.M.
Pathology	W. H. BARRETT, M.B., C.M.; SIDNEY JAMIESON, M.B., C.M.

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Examiners for Degrees, &c.

IN THE FACULTY OF ARTS.

The Professors of Humanity, Mathematics, Greek, Logic and Metaphysics, Moral Philosophy, Natural Philosophy, Rhetoric and English Literature, Chemistry, Botany, Natural History, and Geology, and the following additional Examiners:—

		Appointed
Mathematics	WILLIAM HARVEY, B.A., LL.B.	1888
Classical Literature	GEORGE MACDONALD, M.A. (Edin.), B.A. (Oxon.)	1888
Mental Philosophy	WILLIAM L. DAVIDSON, M.A., LL.D.	1889

IN THE FACULTY OF DIVINITY.

The Professors of the Faculty of Divinity, and the following additional Examiners:—

WILLIAM HASTIE, B.D.
THOMAS A. BICKERTON, B.D. } Appointed 1889.

IN THE FACULTY OF LAW.

The Professors of the Faculty of Law, with the Examiners in Arts and Professor EGGELING for Preliminary Examinations, and the following additional Examiners:—

JAMES REID, LL.B.
MARK DAVIDSON, LL.B. } Appointed Jan. 1890.

IN THE FACULTY OF MEDICINE.

The Professors of the Faculty of Medicine, with the Examiners in Arts and Professor EGGELING for Preliminary Examinations, and the following additional Examiners:—

		Appointed
Materia Medica	C. D. F. PHILLIPS, M.D.	1887
Physiology	D. NÖEL PATON, M.D.	1887
Pathology	G. SIMS WOODHEAD, M.D.	1887
Surgery	W. WATSON CHEYNE, M.B.	1887
Clinical Medicine	J. O. AFFLECK, M.D.	1887
Practice of Physic	ALEX. HUGHES BENNETT, M.D.	1888
Midwifery	D. BERRY HART, M.D.	1888
Anatomy	JOHNSON SYMINGTON, M.D.	1888
Chemistry	W. H. PERKIN, Jun., Ph.D.	1888
Botany	H. MARSHALL WARD, M.A.	1888
Medical Jurisprudence	JOHN WILLIAM TAYLOR, M.D.	1890
Natural History	W. HERDMAN, D.Sc.	1890
Clinical Surgery	J. CRAWFORD RENTON, M.D.	1890

IN SCIENCE.

PRELIMINARY EXAMINATION.

The Examiners for Degrees in Arts, and Professor EGGELING.

MENTAL SCIENCE.

The Professors of Logic and Metaphysics, and of Moral Philosophy.

PHILOLOGY.

The Professors of Humanity, Greek, Hebrew and Oriental Languages, and of Sanskrit and Comparative Philology.

PHYSICAL AND NATURAL SCIENCE.

The Professors of Mathematics, Natural Philosophy, Chemistry, Botany, Natural History, Physiology, and Geology, and the additional Examiners in Mathematics, Chemistry, Botany, and Natural History.

ENGINEERING.

The Professors of Mathematics, Natural Philosophy, Chemistry, and Engineering, the additional Examiners in Mathematics and Chemistry, and in

		Appointed
Engineering	DAVID ALAN STEVENSON, B.Sc., C.E.	1889

PUBLIC HEALTH.

The Professors of Chemistry, Natural Philosophy, Practice of Physic, Materia Medica, Medical Jurisprudence, and Engineering, and the additional Examiners in Mathematics and in Medical Jurisprudence.

AGRICULTURE.

The Professors of Agriculture, Chemistry, Botany, Natural History, Geology, Political Economy, and Engineering, and the following additional Examiners:—
The additional Examiners in Chemistry, Botany, and Natural History, and in

Agriculture	GILBERT MURRAY	1890
Veterinary Hygiene	Principals WILLIAMS and WALLEY...	1890
Chemistry as applied to Agriculture	J. AUGUSTUS VOELCKER, B.A., D.Sc.	1890

FOR SCHOOLMASTER'S DIPLOMA.

The Professor of Education and MAURICE PATERSON, B.A., LL.D. 1889

FOR TITLE OF LITERATE IN ARTS.

The Professors of the Subjects, and the Examiners for Degrees in Arts.

—o—

University Librarian.

HUGH ALEXANDER WEBSTER.

Assistants.

ALEXANDER ANDERSON.
JAMES H. S. GREGORY.
DAVID CUTHBERTSON.
CHARLES MARTIN.
GEORGE TAIT.
WILLIAM WRIGHT, *at University New Buildings.*

Keepers of Museums.

Museum of Natural History	Professor EWART.
Anatomical Museum	Professor Sir WM. TURNER.
Assistant	JAMES SIMPSON.

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Joint Factors and Law Agents	JOHN COOK, W.S.; HENRY COOK, W.S.
Auditor	THOMAS GOLDIE DICKSON, C.A.
Clerk of Senatus, and Sec. and Reg. of General Council	THOMAS GILBERT.
Assistant Clerks	JAMES OLIVER SINCLAIR, JAMES DOWIE
Assistant Registrars	CHARLES HUNTER STEWART, M.B., C.M B.Sc.; ARTHUR EUGENE CLAXTON M.A.
Clerk of Works	ALLAN E. L. CLARK.
Janitor	JOHN CHAPMAN.
Warders	ALEX. ADAIR, JAMES DONALDSON.

Staff of Twelve Servitors.

University of Edinburgh.

CONSTITUTION.

THE University of Edinburgh has grown into its present status out of what was originally a small College, called the "College of Edinburgh" or "The Town's College," which was founded in 1583 by the Town Council of Edinburgh, under the general powers to found educational institutions granted to them by the Charter of King James VI., dated 14th April 1582. No separate Charter of foundation is now extant; but from the first the College possessed the privilege of conferring degrees. This privilege was ratified by the "Act of Confirmation," an Act of Parliament passed in 1621, which secured to the "College of James VI." (as it had come to be called) all the rights, immunities, and privileges enjoyed by the Universities of Scotland. This ratification was renewed in the Treaty of Union between England and Scotland, and in the Act of Security. Gradually, in Acts of General Assembly, Acts of Town Council, and Acts of Parliament, the "College of James VI." came to be styled "The University of Edinburgh." But the institution remained under the absolute control and patronage of the Town Council of Edinburgh down to 1858, when, by the Universities (Scotland) Act, all the Universities of Scotland received new and autonomous constitutions.

The University of Edinburgh is a Corporation consisting of the Chancellor, Rector, Principal, Professors, Registered Graduates and Alumni, and Matriculated Students; and from 1858 to 1890 its government was vested in the Senatus Academicus, subject to the review and control of the University Court

By the Universities (Scotland) Act, 1889, the University Court was constituted a body corporate with perpetual succession and a Common Seal; and the whole property, heritable and movable, belonging to the University, at the date of the passing of the Act, was transferred to and vested in the Court, with power to administer and manage the whole revenue and property of the University.

In addition to the various Endowments for Chairs, Fellowships, Scholarships, Bursaries, &c., the University possesses the property of the Old and New University Buildings, with the Libraries, Museums, Laboratories, Specimens, Apparatus, Furnishings, and Fittings; the Music Class Room, containing a large organ, an interesting collection of Acoustic and Antique Musical Instruments, and a valuable Library of Music; and the official residence of the Principal.

The Senatus Academicus, as heretofore, regulates and superintends the teaching and discipline of the University, subject to the provisions of the Universities (Scotland) Acts of 1858 and 1889.

It may be interesting to show the numbers of Matriculated Students in the University, and the numbers of Degrees conferred by the University, immediately before the Acts of 1858 and of 1889 respectively came into operation.

The numbers of Matriculated Students were :—

	Arts.	Divinity.	Law.	Medicine.	Total.
In 1858-59	573	90	237	526	1336
In 1888-89	1022	109	471	1949	3551

The numbers of Degrees conferred were :—

	Arts.	Divinity.	Law.	Medicine.		Science.	
				M.B., C.M.	M.D.	B.Sc.	D.Sc.
In 1859	16	—	—	—	60	—	—
In 1889	116	11	23	210	60	34	2

The Degrees in Divinity, Law, and Science were instituted since 1859.

CHANCELLOR.

The Chancellor is elected for life by the General Council. He is the Head of the University. Changes in its ordinances and in its internal arrangements, proposed or approved by the University Court, must receive his sanction. All Degrees are conferred by him, or his deputy, the Vice-Chancellor. The Chancellor is President of the General Council, and nominates an Assessor in the University Court. The appointments have been as follows:—

Right Hon. Lord Brougham, 1859.
Right Hon. JOHN INGLIS, D.C.L., LL.D., 1868.

VICE-CHANCELLOR.

The Vice-Chancellor is nominated by the Chancellor. He may, in the absence of the Chancellor, confer Degrees, but cannot discharge any other of the Chancellor's duties. In the Vice-Chancellor's absence Degrees are conferred by the Principal, or, in his absence, by the senior member of Senatus present.

Upon the Vice-Chancellor is imposed the duty of acting as Returning Officer at Parliamentary Elections. If there be no Vice-Chancellor at the time of an Election, the University Court appoints one to act as Returning Officer. The appointments have been—

Sir D. Brewster, appointed 1860.
Sir Alexander Grant, Bart., 1868.
Sir WILLIAM MUIR, K.C.S.I., D.C.L., &c., 1885.

RECTOR.

The Rector is elected by the Matriculated Students on the second Saturday after the beginning of the Winter Session. The term of office is three years. The next election will take place in 1890. The Rector is President of the University Court, and nominates an Assessor in the University Court. The appointments have been—

Rt. Hon. W. E. Gladstone, 1859.
Thomas Carlyle, 1865.
Rt. Hon. Lord Moncreiff, 1868.
Sir W. Stirling Maxwell, Bt., 1871.
Rt. Hon. Earl of Derby, 1874.
Most Hon. Marquess of Hartington, M.P., 1877.
Rt. Hon. Earl of Rosebery, 1880.
Rt. Hon. Earl of Iddesleigh, 1883.
Most Hon. MARQUESS OF LOTHIAN, 1887.

REPRESENTATIVE IN PARLIAMENT.

In accordance with Clauses 27 to 41 of the "Representation of the People (Scotland) Act," 31 & 32 Vict., cap. 48, the Members of the General Councils of the Universities of Edinburgh and St Andrews elect a Member to serve in Parliament for these Universities.

When a poll is demanded, the votes are given by voting papers issued by the Registrar.

The appointments have been—

Sir Lyon Playfair, K.C.B., LL.D., 1868.

Rt. Hon. J. H. A. Macdonald, C.B., Q.C., LL.D., 1885, 1886.

M. T. STORMONTH DARLING, Q.C., 1888.

The Parliamentary constituency for 1890 is as follows :—

Edinburgh	6376
St Andrews	1523
Total in 1890	7899

UNIVERSITY COURT.

The University Court has the following powers conferred by the "Universities Scotland Act, 1858," Sec. xii. :—

1. To review all decisions of the Senatus Academicus, and to be a Court of Appeal from the Senatus in every case, except as otherwise provided in the Universities Act :

2. To effect improvements in the internal arrangements of the University, after due communication with the Senatus Academicus, and with the sanction of the Chancellor ; provided that all such proposed improvements shall be submitted to the general Council for their consideration :

3. To require due attention on the part of the Professors to the Regulations as to the mode of teaching and other duties imposed on the Professors :

4. To fix and regulate, from time to time, the Fees in the several Classes :

5. Upon sufficient cause shewn, and after due investigation, to censure any member of the Senatus Academicus, or to suspend him from his office, and from the emoluments thereof, in whole or in part, for any period not exceeding one year, or to require him to retire from his office on a retiring allowance, or to deprive him of his office ; and during the Suspension of any Professor, to make due provision for the teaching of his class : Provided always that no such sentence of censure, suspension,

or deprivation, or requisition on a Professor to retire from office, shall have any effect until it has been approved by Her Majesty in Council:

By Sec. xix. any of the Rules, Statutes, and Ordinances enacted by the Universities Commissioners for the purposes of the Act, may be altered or revoked by the University Court of the University to which the same are applicable, but only with the consent, expressed in writing, of the Chancellor thereof, and with the approval of Her Majesty in Council.

By the Universities (Scotland) Act, 1889, Section 5, Subsection (3), the University Court is a body corporate with perpetual succession and a common seal; and all the property belonging to the University, or to any existing college forming part of the University at the date of the passing of the Act, is thereby declared to be vested in the University Court.

By Section 6 of the last mentioned Act, the University Court, in addition to the powers conferred upon it by the Universities (Scotland) Act, 1858, shall, subject to any ordinances made by the Commissioners, have power—

(1.) To administer and manage the whole revenue and property of the University, and the college or colleges thereof existing at the passing of this Act, including the share appropriated to such University out of the annual grant hereinafter mentioned, and also including funds mortified for bursaries and other purposes, and to appoint factors or collectors, to grant leases, to draw rents, and generally to have all the powers necessary for the management and administration of the said revenue and property:

(2.) To review any decision of the Senatus Academicus on a matter within its competency which may be appealed against by a member of the Senatus, or other member of the University having an interest in the decision, within such time as may be fixed by the Commissioners, and to take into consideration all representations and reports made to it by the Senatus Academicus and by the general council:

(3.) To review, on representation made by any of its members, or by any member of the Senatus Academicus, within such time as may be fixed by the Commissioners, any decision which the Senatus Academicus may come to in the exercise of its powers under section seven, sub-section one: Provided always, that the University Court shall not review any decision of the Senatus Academicus in a matter of discipline, except upon appeal taken either by a member of the Senatus or by a member of the University directly affected by such decision:

(4.) To appoint professors whose chairs are, or may come to be, in the patronage of the University; to appoint examiners and lecturers; and to grant recognition to the teaching of any college or individual teacher for the purposes of graduation, under any regulations on the subject laid down by the Commissioners, which regulations after the expiration of their powers may from time to time be modified or altered by the Universities Committee:

(5.) To define on application by any member of the Senatus Academicus the nature and limits of a professor's duties under his commission, subject to appeal to the Universities Committee:

(6.) To take proceedings against a principal or professor, University lecturer, assistant, recognised teacher or examiner, or any other person employed in teaching or examining under section twelve, sub-section five, of the Universities (Scotland) Act, 1858, without the necessity of any one not a member of the Court appearing as prosecutor, and for the purposes of such proceedings to call before it any member of the University to give evidence, and to require the production of documents, and also to institute and conduct any such inquiries as it may deem necessary:

(7.) To appoint from among members of the University or others, not being members of the Senatus Academicus, one third of the members of any standing committee or committees charged, by ordinance of the Commissioners under this Act, with the immediate superintendence of any libraries or museums, or the contents thereof, belonging to the University and college or colleges thereof existing at the passing of this Act, and on representation made by any of its members, or by any member of the Senatus Academicus, to review any decision which the Senatus Academicus, in the exercise of its powers, may come to in respect of the recommendations of such committee or committees:

(8.) To appoint committees of its own number consisting of not less than five members, with powers to report on any business that may be entrusted to them by the University Court, or to carry out special instructions ordered by the University Court:

(9.) To elect the representative of the University on the General Medical Council, under the Medical Act, 1886:

(10.) After the expiration of the powers of the Commission to found new professorships with the approval of the Universities Committee, and after such expiration no new professorship shall be founded except as herein [in the Act of 1889] provided.

After the expiration of the powers of the Commissioners, the University Court, by Section 21, shall have power to make such ordinances as they think fit, with the approval of Her Majesty in Council:

(1.) With respect to the appropriation of the sum allotted to such University by the Commissioners out of the annual grant hereinafter referred to;

(2.) Altering or revoking any of the ordinances affecting such University which have been or may be framed and passed under the Universities (Scotland) Act, 1858, or this Act, and making new ordinances:

Provided that such ordinances, before being submitted to Her Majesty for approval, shall have been communicated by the University Court to the Senatus Academicus and to the General Council, whose opinion thereon, if returned to the University Court within one month, shall have been taken into consideration; provided also that the said ordinances, when finally adjusted by the University Court, shall have been communicated to the University Courts of the other Universities, and that, if notice of dissent to such ordin-

ances shall have been taken by any University Court, or by any person directly affected by such ordinance, to the University Court making such ordinances within one month after the receipt thereof, the dissenting University Court or person may within one month after notifying dissent make a representation in regard thereto to Her Majesty in Council; provided further that no ordinance made under this section shall be of any validity until it has been approved by Her Majesty in Council, and that it shall be lawful for Her Majesty to refer such ordinances to the Universities Committee, who shall report to Her Majesty thereon: Provided further, that such ordinances shall be laid before both Houses of Parliament in the manner provided by section twenty of this Act: Provided further, that in computing the period of one month for the purposes of this section, the months of August and September shall not be counted, nor any part thereof.

Stated Meetings of the Court are held for the despatch of ordinary business on the second Monday of each month, excepting the months of August and September, and on the first Monday after 19th January, if necessary, for hearing Registration Appeals. Other Ordinary Meetings may be called as the Court may direct. Special Meetings may at any time be called by order of the Rector or the Principal; or by the Secretary on a requisition specifying the object, signed by at least three members of the Court. Appointments of Examiners in the Faculties of Divinity, Law, and Medicine, and in Science are made on the second Monday of January; and of Examiners in Arts on the second Monday of July. Appointments of Class Assistants are required to be submitted for approval on the second Monday in November. Appointments of Assistant Registrars are made on the second Monday of January.

The University Court holds the patronage of the Chair of Music, and, in conjunction with the President of the Royal Scottish Academy, that of the Chair of Fine Art, as well as a share in the patronage of the Chair of Agriculture. It also elects three of the seven Curators, and appoints the Additional Examiners for Degrees in Arts, Science, Divinity, Law, and Medicine, and the Examiner for the Schoolmaster's Diploma. The appointments of Assistants to Professors are subject to its approval.

The Court consists of the following members, viz.:—1. The Rector; 2. The Principal; 3. The Lord Provost of Edinburgh for the time being; 4. An Assessor nominated by the Chancellor;

5. An Assessor nominated by the Rector; 6. An Assessor nominated by the Lord Provost, Magistrates, and Town Council of Edinburgh; 7. Four Assessors elected by the General Council; 8. Four Assessors elected by the Senatus Academicus; 9. Such number, not exceeding four in all, of representatives of affiliated Colleges as may be appointed under and subject to the arrangements made in terms of section fifteen, sub-section (4), of the Act of 1889: Provided always, that the total number of representatives of affiliated Colleges in the University Court of any University may be increased by the Commissioners or, after the expiration of their powers, by the Universities Committee, if in their opinion respectively special circumstances should arise to require such increase.

Seven members constitute a quorum. No Principal or Professor of any Scottish University is eligible for the office of Rector. The Rector and his Assessor continue in office for three years; but in the event of the Chancellor or Rector ceasing to hold office, his Assessor continues to be a member of the University Court until an Assessor is nominated by the new Chancellor or Rector. The other Assessors continue in office for four years; but all Assessors are eligible for re-election, and no Principal or Professor of any Scottish University is eligible for election as Assessor to any other person or body than the Senatus Academicus. The Rector, and in his absence the Principal, presides at meetings of the University Court, and in the absence of both of them a chairman for the time is elected by the meeting. The person presiding at any meeting of the University Court has a deliberative vote, and also a casting vote in case of equality.

An abstract of the proceedings of the Court is given in a subsequent part of the Calendar.

The names of the present Assessors are given at page 1. The names of the former Assessors will be found in the Historical Appendix to List of University Graduates, published in 1889 (page 105).

UNIVERSITIES COMMITTEE OF PRIVY COUNCIL.

There shall be a Committee of Her Majesty's Privy Council styled the Scottish Universities Committee of the Privy Council.

The Universities Committee shall consist of the Lord President of the Privy Council, the Secretary for Scotland, the Lord Justice General, if a member of the Privy Council, the Lord Justice Clerk, if a member of the Privy Council, the Lord Advocate, if a member of the Privy Council, the Chancellor of each of the Universities, if a member of the Privy Council, the Lord Rector of each of the Universities, if a member of the Privy Council, one member at least of the Judicial Committee of the Privy Council, and such other member or members of the Privy Council as Her Majesty may from time to time think fit to appoint.

The powers and duties of the Universities Committee may, subject to any rules or regulations which may from time to time be passed by Her Majesty in Council, be exercised and discharged by any three or more of the members of the Committee, one of whom shall be a member of the Judicial Committee of the Privy Council or one of Her Majesty's Senators of the College of Justice in Scotland.

CURATORS OF PATRONAGE.

By the Universities (Scotland) Act (1858), the patronage of the seventeen Chairs, previously in the gift of the Town Council, was transferred to seven Curators—three nominated by the University Court, and four by the Town Council. Besides these seventeen Chairs, the Curators have also a share in the patronage of those of Humanity, Agriculture, Civil Law, History, Celtic Languages and Literature, Law of Scotland, and Conveyancing, which was formerly possessed by the Town Council. The Curators hold office for three years. The names of the present Curators are given at page 2. The names of the former Curators will be found in the Historical Appendix to List of University Graduates published in 1889 (pages 105 and 106).

REPRESENTATIVE IN GENERAL MEDICAL COUNCIL.

In accordance with the Medical Act of 1858, the Universities of Edinburgh and Aberdeen were entitled jointly to elect a Member of the "General Council of Medical Education and Registration of the United Kingdom." The appointments have been—

1858. James Syme.
1868. John Macrobin, M.D.
1873. William Turner, M.B.
1883. John Struthers, M.D.

Under the provisions of the Medical Act of 1886, Professor Sir William Turner was appointed in December 1886 for a period of five years, as representative of the University of Edinburgh.

1886. Sir WILLIAM TURNER, M.B., LL.D.

From 1858 to 1890 the Senatus exercised the right of election of the Representative of the University in the General Medical Council. By the Act of 1889, the Court is empowered to elect the Representative in future.

PRINCIPAL.

The Principal, formerly elected by the Town Council, is now appointed by the Curators. The office is held for life. The Principal is the resident Head of the College, and President of the Senatus Academicus ; and, in the absence of the Rector, he presides at the meetings of the University Court, and in the absence of the Chancellor and Rector he presides at the Statutory Meetings of the General Council, and also at the Special Meetings, excepting those for the election of Assessors.

PRINCIPALS ELECTED SINCE 1586.

1586. Robert Rollock, *previously Regent*
1599. Henry Charteris
1620. Patrick Sands
1622. Robert Boyd
1623. John Adamson
1653. Robert Leighton
1662. William Colvill
1675. Andrew Cant
1685. Alexander Monro
1690. Gilbert Rule
1703. William Carstares

1716. William Wishart
1730. William Hamilton
1732. James Smith
1736. William Wishart, *secundus*
1754. John Gowdie
1762. William Robertson
1793. George Husband Baird
1840. John Lee
1859. Sir David Brewster
1868. Sir Alexander Grant, Bart.
1885. Sir Wm. Muir, K.C.S.I.

SENATUS ACADEMICUS.

The Principal and the Professors constitute the Senatus Academicus. This body is entrusted with the superintendence and regulation of the teaching and discipline of the University. The Senatus elects four Assessors in the University Court who hold office for four years. Two retire biennially, but may be re-elected; and in the event of a casual vacancy, the person elected to fill such vacancy shall go out of office at the date when the person whom he succeeded would in the ordinary rotation have retired. It appoints two-thirds of the members of any standing committee or committees charged by ordinance of the Commissioners with the immediate superintendence of any libraries or museums, or the contents thereof, belonging to the University and college or colleges thereof existing at the passing of this Act; and receives in the first instance all reports by such committee or committees, and subject to the review of the University Court, confirms, modifies, or rejects the recommendations in such reports. It also elects a representative in the General Assembly of the Church of Scotland; two Managers of the Royal Infirmary; two Governors of George Heriot's Trust; two Governors of Morrison's Academy, Crieff; two Governors of the Spence Bursary Trust; one Governor of Dollar Institution; one Governor of Stiell's Hospital, Tranent. Degrees in Arts, Divinity, Law, Medicine, and Science are conferred, on the recommendation of the Senatus, by the Chancellor or Vice-Chancellor, and in the absence of both, by the Principal or senior Professor present. The Principal is President, with a deliberative and also a casting vote. In the absence of the Principal, the Senior Professor present acts as Chairman, also with a double vote. The

Ordinary Meetings of Senatus are held on the Monday in October immediately preceding the opening of the Session, the last Saturday of November, January, February, and March; on the Saturday immediately preceding the Christmas holidays; on the last Friday of May, June, and July; on 1st August, not being a Sunday (for conferring Degrees in Law, Medicine, Science, &c.); and in April (for Degrees in Arts, Divinity, Law, &c.), on a day fixed at the Meeting in the January of the preceding year. Extraordinary Meetings may be called by the Principal or by three Professors. One-third of the Senatus constitutes a quorum.

The business of the Senatus is conducted by the Secretary, who, among other duties, summons the Meetings, prepares the Minutes, and intimates business assigned to the Principal, to the Deans of Faculties, or to the Conveners of Committees. The Secretary also administers the *Sponsio Academica* to Graduates.

FACULTIES.

The University contains four Faculties, and a Science Degrees Committee. Each Faculty is presided over by a Dean, who is elected from among the Professors of the Faculty, with the approval of the Senatus. Persons recommended for Degrees in each Faculty are presented to the Senatus by the Dean to whom all communications regarding the administration of the Faculty should be addressed. Persons recommended for Degrees in Science are presented by the Convener of the Section in which the Degrees are conferred. The Deans of the Faculties are mentioned at pp. 2, 3, and 4.

FACULTY OF ARTS.

The Faculty of Arts, the most ancient in the University, comprehends the Chairs of Humanity (Latin), Mathematics, Greek, Logic and Metaphysics, Moral Philosophy, Natural Philosophy, and Rhetoric and English Literature. Attendance on these Classes only is at present required for the Degree of Master of Arts.

To the Faculty of Arts also belong the Chairs of History (in conjunction with the Faculty of Law), Practical Astronomy, Agriculture, Music, Sanskrit, Civil Engineering, Geology, Political Economy (in conjunction with the Faculty of Law), Theory of Education, Fine Art, and the Celtic Languages and Literature.

REGENTS AND PROFESSORS IN THE FACULTY OF ARTS SINCE 1583.

Regents of Philosophy from 1583 *to* 1708.

[*The Regents of Philosophy taught in rotation the four classes in the Curriculum of Arts, the "Bajans," the "Semi-Bajans," the "Bachelors," and the "Magistrands," as the Students of the first, second, third, and fourth year were respectively styled. Each Regent therefore taught every subject in the Curriculum—the Regent of Humanity being subordinate to the Regent of Philosophy, and being employed as a tutor in Classics for Unmatriculated Students. In* 1708 *the system was changed, and separate Professors for Latin, Greek, Logic and Metaphysics, Moral Philosophy and Natural Philosophy, were substituted for the Regents. A Professorship of Mathematics had previously existed.*]

1583. Robt. Rollock, *first Regent*
1583. Duncan Nairn
1585. Charles Lumisdaill
1586. Adam Colt
1586. Alexander Scrimgeour
1587. Philip Heslop
1588. Charles Ferme or Fairholm
1589. Henry Charteris
1589. Patrick Sands
1594. George Robertson
1597. William Craig
1597. John Adamson
1598. James Knox
1598. Robert Scott
1601. Andrew Young
1603. James Reid
1604. David Munro
1606. Blase Colt
1607. James Fairley
1608. William King
1611. Andrew Stevenson
1625. Samuel Rutherford
1625. Robert Ranken
1626. Thomas Crawford
1626. John Brown
1631. Alexander Hepburn
1636. James Wyseman
1638. James Wright
1638. Robert Young
1639. Duncan Forrester
1644. William Tweedie
1644. James Pillans
1647. Andrew Suttie
1653. John Wishart
1665. George Sinclair
1666. John Wood
1667. William Paterson
1679. Gilbert M'Murdoch
1679. Andrew Massie
1680. Alexander Cockburn
1682. Robert Lidderdail
1684. Herbert Kennedy
1686. Thomas Burnet
1689. Alexander Cunningham
1690. William Law
1695. John Row
1695. William Scott
1701. Charles Areskine
1703. Robert Stewart
1707. Colin Drummond

Regents of Humanity from 1597 *to* 1708.

1597. John Ray
1606. Blase Colt

1611. Oliver Colt
1611. Robert Burnet
—— Andrew Stevenson
1623. Samuel Rutherford
1626. Thomas Craufurd
1630. John Armour
1633. Alexander Gibson
1636. James Wyseman
1638. Robert Young
1644. James Pillans
1653. John Wishart
1656. William Forbes
1656. James M'Gowan
1658. Hugh Smith
1663. William Cumming
1665. Andrew Ross
1665. Thomas Bell
1676. Gilbert MacMurdo
1679. Alexander Cunningham
1689. John Drummond

Professssors of Mathematics since 1620.

1620. Andrew Young
1640. Thomas Craufurd
1674. James Gregory
1683. David Gregory
1692. James Gregory
1725. Colin M'Laurin
1747. Matthew Stewart
1775. Dugald Stewart
1785. Adam Ferguson
1785. John Playfair
1805. John Leslie
1819. William Wallace
1838. Philip Kelland
1879. GEORGE CHRYSTAL

Professors of Humanity since 1708.

1708. Laurence Dundas
1728. Adam Watt
1734. John Kerr
1741. George Stuart
1775. John Hill
1806. Alexander Christison
1820. James Pillans
1863. WILLIAM YOUNG SELLAR

Professors of Greek since 1708.

1708. William Scott, *one of the Regents*
1729. William Scott, *secundus*
1730. Colin Drummond
1738. Robert Law
1741. Robert Hunter
1772. Andrew Dalziel
1805. George Dunbar
1852. John Stuart Blackie
1882. SAMUEL HENRY BUTCHER

Professors of Logic and Metaphysics since 1708.

1708. Colin Drummond, *one of the Regents*
1730. John Stevenson
1774. John Bruce
1786. James Finlayson
1808. David Ritchie
1836. Sir Wm. Hamilton, Bart.
1856. ALEXANDER CAMPBELL FRASER

Professors of Moral Philosophy since 1708.

1708. William Law, *one of the Regents*
1729. William Scott
1734. John Pringle
1745. William Cleghorn
1754. James Balfour
1764. Adam Ferguson
1785. Dugald Stewart
1810. Thomas Brown
1820. John Wilson
1853. P. C. M'Dougall
1868. HENRY CALDERWOOD

Professors of Natural Philosophy since 1708.

1708. Robert Stewart, *one of the Regents*
1742. John Stewart
1759. Adam Ferguson

1764. James Russell
1774. John Robison
1805. John Playfair
1819. Sir John Leslie
1833. James David Forbes
1860. PETER GUTHRIE TAIT

Professors of Rhetoric and English Literature since 1762.

1762. Hugh Blair
1784. William Greenfield
1801. Andrew Brown
1835. George Moir
1840. William Spalding
1845. William Edmondstoune Aytoun
1865. DAVID MASSON

Professors of History since 1719. (See Faculty of Law.)

Professors of Practical Astronomy since 1786.

1786. Robert Blair
1834. Thomas Henderson
1846. Charles Piazzi Smyth
1889. RALPH COPELAND

Professors of Agriculture since 1790.

1790. Andrew Coventry
1831. David Low
1854. John Wilson
1885. ROBERT WALLACE

Professors of the Theory of Music since 1839.

1839. John Thomson.
1841. Sir Henry Rowley Bishop
1844. Henry Hugh Pearson
1845. John Donaldson
1865. Sir HERBERT STANLEY OAKELEY

Professor of Technology.

1855. George Wilson
[Chair abolished 1859.]

Professors of Sanskrit since 1862.

1862. Theodor Aufrecht
1875. JULIUS EGGELING

Professors of Engineering.

1868. Fleeming Jenkin
1885. GEORGE FREDERICK ARMSTRONG

Professors of Geology.

1871. Archibald Geikie
1882. JAMES GEIKIE

Professors of Commercial and Polit. Economy and Mercantile Law. (See also Faculty of Law.)

1871. W. B. Hodgson
1880. JOSEPH SHIELD NICHOLSON

Professor of Education.

1876. SIMON SOMERVILLE LAURIE

Professor of Fine Art.

1880. GERARD BALDWIN BROWN

Professor of Celtic Languages, &c.

1882. DONALD MACKINNON

FACULTY OF DIVINITY.

This Faculty, the second in chronological order, comprehends the four Chairs of Divinity, Hebrew and Oriental Languages, Divinity and Ecclesiastical History, and Biblical Criticism and Antiquities.

PROFESSORS IN THE FACULTY OF DIVINITY SINCE 1620.

Professors of Divinity since 1620.

1620. Andrew Ramsay
1627. Henry Charteris
1629. James Fairly
1630. John Sharpe
1648. Alexander Colvill
1649. Samuel Rutherford
1650. David Dickson
1662. Patrick Scougall
1664. William Keith
1675. Laurence Charteris
1682. John Menzies
1683. John Strachan
1690. George Campbell
1701. George Meldrum
1709. William Hamilton
1732. James Smith
1733. John Gowdie
1754. Robert Hamilton
1779. Andrew Hunter
1809. William Ritchie
1828. Thomas Chalmers
1844. John Lee
1859. Thomas J. Crawford
1876. ROBERT FLINT

Professors of Hebrew and Oriental Languages since 1642.

1642. Julius Conradus Otto
1656. Alexander Dickson
1679. Alexander Amedeus
1681. Alexander Douglas
1692. Patrick Sinclair
1694. Alexander Rule
1702. John Goodall
1719. James Crawford
1732. William Dawson
1751. James Robertson
1792. George Husband Baird
1793. William Moodie
1812. Alexander Murray
1813. Alexander Brunton
1848. David Liston
1880. DAVID LAIRD ADAMS

Professors of Divinity and Church History since 1695.

1702. John Cumming
1715. William Dunlop
1726. Matthew Crawford
1737. Patrick Cumming
1762. Robert Cumming
1788. Thomas Hardie
1799. Hugh Meiklejohn
1831. David Welsh
1844. James Robertson
1861. William Stevenson
1872. Robert Wallace
1876. MALCOLM CAMPBELL TAYLOR.

Professors of Biblical Criticism and Biblical Antiquities since 1846.

1847. Robert Lee
1868. ARCHIBALD HAMILTON CHARTERIS

FACULTY OF LAW.

To this Faculty belong seven Chairs, viz.:—Public Law, Civil or Roman Law, Constitutional Law and History (in conjunction with the Faculty of Arts), Law of Scotland, Medical Jurisprudence (in conjunction with the Faculty of Medicine), Conveyancing, and Commercial and Political Economy and Mercantile Law (in conjunction with the Faculty of Arts). Attendance on these classes is required by Candidates for Degrees in Law.

PROFESSORS IN THE FACULTY OF LAW SINCE 1707.

Professors of Public Law since 1707.

1707. Charles Areskine
1734. William Kirkpatrick
1735. George Abercrombie
1759. Robert Bruce
1764. James Balfour
1779. Allan Maconochie
1796. Robert Hamilton
1832. * * *
1862. James Lorimer
1890. Sir LUDOVIC GRANT, Bt.

Professors of Civil Law since 1710.

1710. James Craig
1732. Thomas Dundas
1745. Kenneth M'Kenzie
1755. Robert Dick
1792. John Wilde
1800. Alexander Irving
1827. Douglas Cheape
1842. A. Campbell Swinton
1862. James Muirhead
1889. HENRY GOUDY

Professors of History since 1719.

1719. Charles Mackie
1753. John Gordon
1754. William Wallace
1755. John Pringle
1780. Alex. Fraser Tytler
1801. William Fraser Tytler
1821. Sir William Hamilton
1837. George Skene
1842. James Frederick Ferrier
1846. Cosmo Innes
1874. Æneas J. G. Mackay
1881. JOHN KIRKPATRICK

Professors of the Law of Scotland since 1722.

1722. Alexander Bayne
1737. John Erskine
1765. William Wallace
1786. David Hume
1822. George Joseph Bell
1843. John Schank More
1861. George Ross
1864. George Moir
1865. Norman Macpherson
1888. JOHN RANKINE

Professors of Medical Jurisprudence since 1807.

1807. Andrew Duncan, *secundus*
1820. William Pulteney Alison
1822. Robert Christison
1832. Thomas Stewart Traill
1862. Sir DOUGLAS MACLAGAN

Professors of Conveyancing since 1825.

1825. Macvey Napier
1847. Allan Menzies
1856. A. Montgomerie Bell
1866. JAMES STUART FRASER TYTLER

Professors of Commercial and Political Economy since 1871.[1]

1871. W. B. Hodgson, and reappointed 1878.
1880. JOSEPH SHIELD NICHOLSON, re-appointed 1887.

FACULTY OF MEDICINE.

The Faculty consists of the following twelve Chairs:—Botany, Institutes of Medicine, Practice of Physic, Anatomy, Chemistry, Midwifery, Natural History, Materia Medica, Clinical Surgery,

[1] This Chair was declared to be a Professorship in the Law as well as in the Arts Faculty by resolution of the Senatus Academicus in 1879.

Medical Jurisprudence (in conjunction with the Faculty of Law), Surgery, and General Pathology. The Professors of Practice of Physic, Materia Medica, and Pathology, are also Professors of Clinical Medicine. Some of these Chairs were instituted in the seventeenth century, but it does not appear that the Medical School and Faculty of the University was established earlier than the beginning of last century.

PROFESSORS IN THE FACULTY OF MEDICINE SINCE 1676.

Professors of Botany since 1676.

1676. James Sutherland
1706. Charles Preston
1712. George Preston

Professors of Medicine and Botany.

1738. Charles Alston
1761. John Hope
1786. Daniel Rutherford
1820. Robert Graham
1845. John Hutton Balfour
1879. Alexander Dickson
1888. ISAAC BAYLEY BALFOUR

Professors of Medicine in 1685.

1685. Sir Robert Sibbald, James Halket, Archibald Pitcairne

Professors of Institutes of Medicine since 1724.

1724. William Porterfield
1726. Andrew St Clair, John Rutherford
1747. Robert Whytt
1766. William Cullen
1773. Alex. Monro Drummond
1776. James Gregory
1789. Andrew Duncan
1819. Andrew Duncan, *secundus*
1821. William Pulteney Alison
1842. Allen Thomson
1848. John Hughes Bennett
1874. WILLIAM RUTHERFORD

Professors of Practice of Physic since 1724.

1724. William Porterfield
1726. Andrew St Clair, John Rutherford
1747. Robert Whytt
1766. John Gregory
1773. William Cullen
1790. James Gregory
1821. James Home
1842. William Pulteney Alison
1855. Thomas Laycock
1876. THOMAS GRAINGER STEWART

Professors of Anatomy since 1705.

1705. Robert Elliot
1708. Adam Drummond
1716. John M'Gill
1720. Alexander Monro
1754. Alex. Monro, *secundus*
1798. Alexander Monro, *tertius*
1846. John Goodsir
1867. Sir WILLIAM TURNER

Professors of Chemistry and Medicine since 1713.

1713. James Crawford
1726. Andrew Plummer
1726. John Innes
1755. William Cullen
1766. Joseph Black
1795. Thomas Charles Hope

Professors of Chemistry.

1844. William Gregory
1858. Lyon Playfair
1869. Alex. Crum Brown

Professors of Midwifery since 1726.

1726. Joseph Gibson
1739. Robert Smith
1756. Thomas Young
1780. Alexander Hamilton
1800. James Hamilton
1840. Sir J. Y. Simpson, Bart.
1870. Alexander Russell Simpson

Professors of Natural History since 1767.

1770. Robert Ramsay
1779. John Walker
1804. Robert Jameson
1854. Edward Forbes
1855. George James Allman
1870. Sir Wyv. T. C. Thomson
1882. James Cossar Ewart

Professors of Materia Medica since 1768.

1768. Francis Home
1798. James Home
1821. Andrew Duncan, *secundus*
1832. Sir Robt. Christison, Bart.
1877. Thomas Richard Fraser

Professors of Clinical Surgery since 1803.

1803. James Russell
1833. James Syme
1869. Joseph Lister
1877. Thomas Annandale

Professors of Military Surgery since 1806.

1806. John Thomson
1823. Sir George Ballingall
[Chair abolished.]

Professors of Medical Jurisprudence since 1807.
[See Faculty of Law.]

Professors of Surgery since 1777.

1777. Alex. Monro, *secundus*
1798. Alexander Monro, *tertius*
1831. John William Turner
1836. Sir Charles Bell
1842. James Miller
1864. James Spence
1882. John Chiene

Professors of General Pathology since 1831.

1831. John Thomson
1842. William Henderson
1869. W. R. Sanders
1881. William Smith Greenfield

ASSISTANTS TO PROFESSORS.

In the Faculty of Arts there are Assistants to the Professors of Humanity, Greek, Mathematics, and Natural Philosophy, appointed under Ordinance No. 23. In the Faculty of Medicine there are assistants to the Professors of Anatomy, Chemistry, Materia Medica, and Medical Jurisprudence, also appointed under that ordinance. The Professors of Logic, Moral Philosophy, Rhetoric and English Literature, Natural Philosophy, Engineering, Geology, Hebrew and Oriental Languages, Scots

Law, Civil Law, Conveyancing, Botany, Natural History, Institutes of Medicine, Practice of Physic, Surgery, Midwifery, Clinical Medicine, Clinical Surgery and Pathology, also have Assistants, provided by the University. The Assistants are appointed annually by the respective Professors, subject to the approval of the Senatus Academicus and of the University Court.

GENERAL COUNCIL OF THE UNIVERSITY.

The Chancellor, the Members of the University Court, the Professors, the Graduates, and all persons who previous to 2d August 1861 had, as Matriculated Students, given regular attendance on the course of study in the University for four complete Sessions, or for three complete Sessions in this, and a fourth in another Scottish University—the attendance for at least two of such sessions having been on the course of study in the Faculty of Arts, are entitled to be registered as Members of the General Council. The fee for registration is £1.

The Register for the current year contains 6376 Members, and is conclusive of the rights of persons to be Members up to 1st January 1891. By the Universities Elections Amendment (Scotland) Act all candidates for graduation are required to pay the Registration Fee before they can be allowed to appear for graduation.

Under the Universities (Scotland) Act of 1858, and the Commissioners' Ordinance No. 1, section 3, following thereon, the Council meets twice a-year—viz., on the *first Tuesday after the fourteenth day of April*, and on the *last Friday in October*, at three o'clock, "*to take into their consideration* all questions affecting the well-being and prosperity of the University, and to *make representations from time to time on such questions* to the *University Court*, who shall consider the same, and return to the Council their deliverance thereon." All proposed improvements in the internal arrangements of the University "shall be submitted to the University Council for their consideration."

By the Universities (Scotland) Act, 1889, in addition to the

two statutory meetings above mentioned, the Council "may hold special meetings at the instance of the Chancellor, who shall convene such meetings on a requisition from a quorum of members, and the Council may adjourn any meeting, and may appoint Committees to investigate into and report upon any matter remitted to them or to carry out instructions given to them by the Council."

The Universities Commissioners under the last-mentioned Act have fixed the quorum of the General Council at ten for every complete thousand or fraction of a thousand on the register of the members, but this provision does not apply to the statutory half-yearly meetings.

The Universities Commissioners are empowered by section 14, sub-section (2), of the last mentioned Act, to regulate the powers, duties, jurisdictions, and privileges of the General Council.

The Chancellor is by statute President of the Council; and in his absence, the Rector; whom failing, the Principal or Senior Professor present is President of the statutory and special meetings (excepting as after mentioned), with a deliberative and also a casting vote.

At the meetings for the Election of Assessors in the University Court, if the Chancellor and Rector are both absent, the Chancellor's Assessor (if a member of the General Council), and in his absence the Rector's Assessor (if a member of the General Council), is Chairman, and in the absence of all the said officials, a Chairman is elected by the meeting. The Chairman has a deliberative and a casting vote.

The General Council of this University, and the General Council of the University of St Andrews jointly, return a Member of Parliament.

The *Chancellor* and *four of the Assessors* in the University Court are elected by the Council. The Chancellor holds office for life, and the Assessors for four years from the date of Election. Two of the Assessors retire biennially, but may be re-elected. In the event of a casual vacancy the person elected to fill such vacancy retires from office at the date when the person whom

he succeeded would in the ordinary rotation have retired. No member of the Senatus Academicus of any University is entitled to vote or take part in the election of any Assessor of the General Council of that University. The next election of two Assessors may take place in *November* 1891.

Members of General Council are entitled to the use of the University Library on payment of an annual fee of 10s. 6d., or they may compound for such annual fee by one payment of £5, 5s.

STUDENTS' REPRESENTATIVE COUNCIL.

The Universities Commissioners are empowered to lay down regulations for the constitution and functions of a Students Representative Council in the University, and to frame regulations under which that Council shall be entitled to make representations to the University Court.

MATRICULATION.

University Matriculation consists in the signing of the Sponsio Academica by Students, thus entering their names in the General Roll of Students of the University, and in paying a fee of £1 for the academic year (1st October to 1st October), or a fee of 10s. for a Summer Session, beginning on 1st May. Matriculation is necessary before a Student can enter any of the Classes in the University, excepting certain additional courses after mentioned.

Matriculated Students may be members of any of the four Faculties. They have the privilege of electing the Rector of the University. In case of an equality of votes, the Chancellor, or failing him, the Principal, has the casting vote. Students also enjoy the right of admission to the University Library, and on certain days to the Museum of Natural History. Their names are preserved in the General Album, which is the legal register of attendance at the University.

All Candidates for Graduation in Law, in Medicine and Surgery, and in Science, not Students of the University, availing themselves of the permission to attend the Lectures of Extra-Academical Teachers in Edinburgh, must, at the beginning of

each year of such attendance, enrol their names in a book to be kept by the University for that purpose, paying a Fee of the same amount as the Matriculation Fee paid by Students of the University, and having in respect of such payment, a right to the use of the Library of the University.

The following is the Sponsio Academica signed by students on matriculating—

QUOD FAUSTUM FELIXQUE SIT. A. D.——

Ego Universitatis Academicae Edinburgensis Discipulus sinceré ac sancté promitto quod et syngraphâ hac meâ in perpetuum testatum cupio, mihi ante omnia cordi ac curàe futurum verae pietatis studium ; me etiam in assuetis academici curriculi studiis sedulum fore, ut adolescentem bene institutum decet ; et quamdiu in illo curriculo permansero praeceptoribus omnibus morigerum memet praestiturum, nec ullius dissidii aut tumultus clam palamve vel auctorem vel participem futurum, et per reliquam vitam Universitatem Academicam Edinburgensem ipsam grato et benevolo animo prosecuturum, idque omnibus officiis pro facultate mea et occasione data testaturum esse.

MATRICULATIONS (1st May 1889 to 1st May 1890).

FOR SUMMER SESSION :—		
I. Faculty of Arts	23	
II. Faculty of Divinity	1	
III. Faculty of Law	5	
IV. Faculty of Medicine	114	
	——	143
FOR ACADEMIC YEAR :—		
I. Faculty of Arts	959	
II. Faculty of Divinity	124	
III. Faculty of Law	467	
IV. Faculty of Medicine	1930	
	——	3480
Total Matriculations from May 1889 to May 1890		3623

The Senatus Academicus may, with the approval of the University Court, sanction the admission of persons who are not Matriculated Students of the University to any Course of Lectures in the University not included in the Course of Study

for Graduation in any Faculty, on payment to the General University Fund of an Entrance Fee of Five Shillings in addition to the authorised Class Fee; but such payment shall not entitle such person to any other University privilege. The Courses which at present may be attended under this Regulation are :—

Constitutional Law and History, short additional Courses on.
Engineering, short additional Courses on.
Fine Art, short additional Courses on.
Economic History, short Courses on (in connection with Political Economy).
Civil and Criminal Procedure.
Mental Diseases.
Diseases of the Eye.
Clinical Instruction on Diseases of Children.
Comparative Embryology.
Forestry.

Other Courses may from time to time be sanctioned under this Regulation.

Students are subject to the disciplinary jurisdiction of the Professors and of the Senatus Academicus. Among offences liable to be visited with severe academic penalties may be mentioned riotous or disorderly conduct within or without the University Buildings, copying at examinations, and mutilating or disfiguring books belonging to the University Library.

UNIVERSITY EXAMINERS,

FOR DEGREES.[1]

I. *Faculty of Arts.*—The Examiners for the Degree in Arts are the seven Professors whose classes are embraced in the Curriculum; and, in addition, three persons (Members of a Scottish University Council, but not Professors or Assistant Professors in any Scottish University) appointed (each for three years) by the University Court, in whose appointment regard must be had to their eminence in Classical Literature, Mental

[1] For Regulations as to time of appointment and Substitutes for absent Examiners, *see* p. 35. For names of former Examiners, *see* Historical Appendix to List of University Graduates, published in 1889, pp. 111 and 112. For names of the present Examiners, *see* pp. 5 and 6 hereof.

Philosophy, and Mathematical Science, respectively. No Examiner can be re-appointed till he has ceased to hold office for a year. Candidates for Honours in Natural Science are examined by the Professors of Natural History, Chemistry, Botany, and Geology.

II. *Faculty of Divinity.*—The Examiners for the Degree of Bachelor in Divinity are the four Professors of the Faculty, together with two Examiners appointed by the University Court for the term of three years.

III. *Faculty of Law.*—The Examiners for the Degrees of Bachelor of Laws (LL.B.) and Bachelor of Law (B.L.) are the seven Professors of the Faculty, two Examiners selected by the University Court from those who have graduated in Laws, and an Examiner in French and German.

IV. *Faculty of Medicine.*—The Examiners for Degrees in Medicine are the Professors in the Faculty, with the addition of twelve persons appointed annually by the University Court. The Preliminary Examination of Candidates for Medical Degrees is conducted by the Examiners in Arts, and an Examiner in French and German, with some of the Medical Examiners.

ANNUAL CEREMONIALS FOR GRADUATION.

The relative precedence of each Faculty is as follows :—1. Divinity ; 2. Law ; 3. Medicine ; 4. Arts. The Deans take precedence in their respective Faculties followed by the Members of their Faculties in the order of the dates of their Commissions.

The Public Ceremonial of Graduation in Divinity, Law, Arts, and Science is held annually in April.

Degrees in Law and in Medicine are publicly conferred on the first of August in each year.

Graduates must appear on these occasions in the Academic Costume proper to their respective Degrees.

ACADEMIC COSTUME.

The ordinary form of Gowns worn by Graduates of the University is the same in all the Faculties—viz., black silk or stuff, with long sleeves. The distinctive part of the costume is in the *Hood* appropriated to each Faculty. These Hoods are as follow:

LL.D.—Black *cloth*, lined with *blue* silk.

LL.B. and B.L.—Black *silk*, lined also with *blue* silk, bordered with white fur.

D.D.—Black *cloth*, lined with *purple* silk.

B.D.—Black *silk*, lined also with *purple* silk, bordered with white fur.

M.D.—Black *cloth*, with appended cape, lined and faced with *crimson* silk.

M.B. and C.M.—Black *silk*, lined with *crimson* silk, bordered with white fur.

Sc.D.—Black *cloth*, lined with *green* silk.

Sc.B.—Black *silk*, lined with *green* silk, bordered with white fur.

M.A.—Black *silk*, lined with *white* silk.

The full Academic Dress for Doctors of Law, Medicine, and Science, is Gown of superfine Scarlet Cloth, loose sleeves, the cape and facings down the front covered, and the sleeves lined, with rich silk of the colour proper to the Degree. Birretum of black silk velvet.

REGULATIONS OF UNIVERSITY COURT.

I.—Absence of Professors.

24th Jan. 1887.

1. When any Professor shall be prevented from teaching his Class for more than three successive days, an arrangement shall be made for his Class being taught in his absence; and such arrangement shall be intimated to the Dean of his Faculty.

2. When any Professor has reason to expect that the demands of his Profession may involve absence from duty for more than four days in all in the course of a Session, an arrangement similar to that in Regulation 1 shall be made and intimated to the Dean of his Faculty.

3. No arrangement for teaching a Class in absence of the Professor shall continue longer than one week without the sanction of the Senatus Academicus; or, if there be no sufficiently early meeting of the Senatus, without the *interim* sanction of the Principal and Deans Committee.

4. When any Professor shall contemplate an absence from duty of more than one week, it shall be necessary for him to obtain the sanction of the Senatus for such absence, and for the arrangements for teaching his Class; and if his contemplated absence extend to four weeks or upwards, the sanction of the Senatus shall require the confirmation of the University Court.

5. No Professor shall employ any one other than a Colleague or Univer-

sity Assistant to teach his Class for him, without obtaining the sanction of his Faculty; and such sanction shall be communicated to the Senatus at its first meeting thereafter.

6. The Statement of the arrangements for teaching a Class in the absence of the Professor, submitted to the authorities of the University, shall specify the remuneration proposed to be given to the Professor's Substitute.

II.—Absence of Examiners.

12th June 1876.

1. Any University Examiner who finds himself prevented from being present at any Examination at which it is his duty to act, shall intimate this to the Dean or other Chairman of his Examining Board, who, on receiving such intimation, or otherwise becoming aware of the absence of the Examiner, shall, if possible, appoint a properly qualified Substitute to act for such Examiner.

2. In every case in which a person is appointed to act as Substitute for a University Examiner, and in which his Faculty, or Examining Committee, shall consider it necessary that the Substitute shall receive remuneration, the rate of remuneration to be paid by the Examiner (whether a Professor or Additional Examiner) to his Substitute shall be fixed by the Faculty, or Examining Committee, and shall be based upon the amount of the Fees payable to the Additional Examiners attached to the Faculty or Examining Committee.

3. All absences of University Examiners, their duration and cause, and the relative arrangements made, shall be immediately reported for approval to the Senatus Academicus by the Chairman of the Board to which the absent Examiner is attached; and a similar Report shall in every case of the absence of a University Examiner be made by the Senatus Academicus to the University Court; provided always that such arrangements shall receive immediate effect when circumstances do not permit the previous approval of the Senatus Academicus to be obtained.

4. In every case in which a Professor shall apply for leave of absence from his duties generally, provision shall be made, under the existing Regulations regarding leave of absence to Professors, for the performance of his duties as Examiner, as well as for the performance of his duties as Teacher; and provision shall be made for the remuneration of his Substitute in both capacities.

III.—Applications for Additional (or Non-Professorial) Examinerships in the University.

17th February 1890.

1. Applicants should lodge sixteen copies of their applications (one of which should be signed), and sixteen copies of any testimonials they may desire to present, with the Secretary of the Court, not later than one week before the day fixed for making appointments in each case.

2. Applicants who send in testimonials must not send more than four for any one appointment.

3. The days for making appointments to the Additional Examinerships falling vacant in the ordinary course are :—In Arts, on the second Monday of July, for the period commencing on 1st October following ; in Divinity, Medicine, Law, and the Civil Engineering and Agriculture Department of Science, on the second Monday of January in each year, for the period commencing on the 1st of that month ; for Schoolmaster's Diploma, on the third Monday of November.

4. The appointments in Divinity, Arts, Law, the C. E. and Agriculture Departments of Science, and for the Schoolmaster's Diploma, are for three years. The appointments in Medicine are for one year, and the persons appointed may hold office by annual reappointment for a period of five years, but not longer, except under special circumstances.

5. Persons may be appointed to examine in two of the thirteen Subjects of the Examinations for Graduation in Medicine, but not more, and not in more than one Subject in any one Division of the Examinations.

6. Every applicant for an appointment in Divinity must hold the degree of B.D. from a Scottish University.

7. Every applicant for an appointment in Arts must be a member of the General Council of a Scottish University.

IV.—Opening of New Classes.

6th May 1868.

No class in addition to those existing in the University shall at any time be opened,—whether for the purpose of dividing the course on a subject necessary for graduation, or for teaching a class not requisite for graduation,—without the approval of the Senatus and the sanction of the University Court.

V.—Recognition of Extra-Academical Teachers.

17th Feb. 1890.

1. Every applicant for recognition shall furnish for the information of the Authorities of the University :—

(1.) A Statement of his Registered Qualification or Qualifications, and of the name of the Office, or Appointment (if any) which he holds, as a Teacher of the Subject in which he requests recognition.

(2.) A Syllabus of his Course of Lectures ; or, in the case of a Practical Class, information of a similar kind.

(3.) A Statement of the number of Lectures, and of the number of Written or Oral Examinations in the Course ; or, in the case of a Practical Class, information of a similar kind.

(4.) A Short description of his Accommodation for a Class; and of the Apparatus, Illustrative Specimens, Diagrams, and other appliances, at his disposal for teaching the Subject in which he desires recognition.

(5.) A Statement of his opportunities of studying the Subject, and of the length of time devoted thereto.

(6.) A Statement of the experience he has had in teaching the Subject.

(7.) A Note of the Titles of his published Contributions to the Science of the Subject.

(8.) A Statement as to whether his Course or Courses of Instruction have been already recognised by any University or other examining body, and, if so, what means were adopted for ascertaining his qualifications for teaching.

2. In the case of every Applicant for recognition residing in Edinburgh or its neighbourhood, an inspection shall be made of his teaching Appliances and Accommodation for teaching.

3. Every recognised Extra-Academical Teacher shall annually furnish the University with the information regarding his Course or Courses which is required from the University Professors as to (1.) The number of Students attending the recognised Course or Courses of Instruction; (2.) The number of meetings for ordinary Class Work in the Session, and in each week thereof, excluding meetings which fall under the next head; (3.) The number of Special Written Examinations; (4.) The system of conducting the ordinary Class Work, and the number of meetings devoted to each kind of work.

4. The Certificate of Attendance granted to Students by recognised Extra-Academical Teachers, should, in all cases, state the number of Lectures, or of Meetings for Practical Instruction, in the Course; the number of occasions on which attendance was ascertained; and the number of those occasions on which the Student was present. The Certificate should also state the general scope of the Course; and, in particular, in the case of Chemistry, that the Course included Organic as well as Inorganic Chemistry; in the case of Midwifery, that it included the diseases of Women and Children; and, in the case of Practical Materia Medica, that it included Pharmacognosy, Pharmacy, Dispensing, and the writing of Prescriptions.

5. In the event of an Extra-Academical Teacher removing from the premises or building occupied by him for teaching a recognised Course, such Teacher shall be required to intimate his removal to the University Court, in order that the Court may have an opportunity of considering whether the accommodation in the building to which he has removed is adapted for the purpose of teaching the Subject in which he is recognised.

6. When application is made for the recognition of a Course taught by two or more Teachers in conjunction, information shall be given of

the share to be taken by each Teacher in such conjoined Course ; and the recognition of such conjoined Courses, and of each of the persons recognised as Teachers of a conjoined Course shall, *ipso facto*, terminate should one or more of the Teachers cease to conduct the Course, or should any material change be made in the share of each Teacher in the teaching of the conjoined Course.

7. The recognition of any Teacher who fails to furnish the information called for in Section 3, or an explanation relative to such failure ; or who has ceased for the period of two consecutive Sessions to teach the subject on which he is recognised shall, *ipso facto*, terminate.

University Buildings.

THE University Buildings at present consist of three distinct portions: (1) The College, or University (Old) Building, with Dome, in South Bridge Street; (2) The University New Buildings (School of Medicine), Teviot Row; and (3) The Music Class Room, Park Place.

I.—THE UNIVERSITY (OLD) BUILDING.

The University (Old) Building, which covers the site of "Kirk o' Field," the scene of the murder of Darnley, contains the University Library and Reading Rooms; the Class Rooms of the Faculties of Arts, Divinity, and Law, and the Natural History Class Room; the Theological Library and Reading Room; the Examination Hall; the Physical, and the Geological and Petrological Laboratories; the Fulton Engineering Laboratory; the Physical, Geological, Fine Art, and Natural History Museums; the Senate Hall, University Court Room, and the Offices of the Senatus, of the University Court, and of the Students' Representative Council.

The work of teaching began in 1583, but until the latter part of the eighteenth century, the professors and students of the University had been very imperfectly housed. In a Memorial, dated 1768, Principal Robertson complains that the buildings, "poor in themselves, seem not to have been carried on according to any regular plan, such as takes place in other academical structures which have been erected on more opulent foundations; and hence the whole fabric has a mean, irregular, and contemptible appearance." At this time the number of students was estimated to be between six and seven hundred, and the number of professors was twenty-one.

Twenty years later this complaint was repeated by a writer in the "Scots Magazine," who notices that "in 1788 the buildings of the University are in the same ruinous condition that they were in in 1768, and the most celebrated University at present in Europe is the worst accommodated." A scheme for rebuilding, which had been often discussed, was now taken seriously in hand by the Town Council, encouraged by promise of liberal aid from Government. A plan was obtained from Robert Adam, then at the height of his reputation, and the foundation stone of "the New College of Edinburgh" was laid with considerable pomp on November 16, 1789.

The original plans of Robert Adam, preserved in the Soane Museum in London, divide the space now occupied by the College buildings into two quadrangles, a smaller to the east, entered as at present from South Bridge Street, and a larger beyond it to the west, a block of academic buildings lying between. This arrangement was doubtless intended to obviate the difficulties caused by the rapid rise of the ground from north-east to south-west. Round the two courts thus formed there were not only to be Class Rooms, Museums, and a Library, but also houses for the Principal and Professors. The western side of the larger court was to be occupied by a large Graduation Hall and Chapel. Corridors and lobbies were to surround the great quadrangle, affording covered communication between the different class rooms. The buildings were begun at different points, chiefly on the eastern and northern sides, but had not proceeded far towards completion when the death of the architect in 1792, and soon afterwards a failure of funds, caused a cessation of the work. The fabric, partly old and partly new, remained in a very unsatisfactory state till 1815, when a Government Commission was appointed to collect funds and to carry out the undertaking, though in a somewhat modified form. An advertisement was then issued, inviting plans "for finishing the College of Edinburgh, on a reduced scale, leaving out the south front, and the cross building, which formed the small court in the original plan,—regard being always had to the part already executed, and to the preservation of the architecture of Mr

Adam, as far as practicable." Out of nine sets of plans sent in, those of William Henry Playfair were finally selected, and under his superintendence the work progressed rapidly till its practical completion in 1828, by which date the New Buildings had cost in round figures some £161,000.

In the buildings as they appear at present, the general character of the whole design is due to Robert Adam. Some portions were actually erected by him, or completed after his death in accordance with his drawings. In other parts some modification of Adam's plans and elevations was necessary, while the designs of a third portion had to be furnished anew by Mr Playfair, who was careful in both these cases to provide that, in his own words, "the exterior of the buildings would be executed as nearly similar as possible to Mr Adam's design." The eastern exterior front, a very fine specimen of monumental architecture, with its monolithic columns 22 feet in height, was erected by Adam. So, too, was the north-west corner of the great court, of which the circular Loggie form an admired feature, while he also carried out a considerable portion of the north front to what is now Chambers Street, and commenced the western block. The principal modification introduced by Playfair was the throwing of the two courts into one, which involved a reconsideration of the north and south interior elevations. Here Adam's plan was departed from, and the present elevations on these two sides are due to his successor. Playfair erected the elevations of the western block after Adam's designs with some very slight improvements ; but the interior treatment of the block, which he fitted up for the Natural History Museums, is his own, and the "Upper Museum," now the Natural History Laboratory, is a good specimen of his style. The "circular corners" which Adam had designed for his great court were retained by Playfair for his single quadrangle, but in order to fit them on at the eastern end, a new screen of masonry was erected on the inner front of the eastern portico. On the exterior, the north front is Adam's, and its comparative plainness is due to the fact that at the time only a narrow lane bounded the College on the side where now runs the broad

thoroughfare of Chambers Street. For the south exterior front Adam had given a handsome and ornate design, which was afterwards simplified by Playfair, but is still superior in treatment to the corresponding elevation to the north.

The difficulty of the levels in the quadrangle was overcome by Playfair in a most satisfactory manner. He designed a terrace surrounding the court, under which on the northern and eastern sides is a basement story, while access is gained from the area below by flights of steps. The whole provides a very suitable architectural base for the noble buildings surrounding the quadrangle.

The interior arrangements were considerably modified by Playfair, and his great achievement is the Library Hall, a fine gallery measuring 185 feet by 54 feet, with an arched ceiling enriched with cassettes, the effect of which is, however, marred by insufficient lighting. For all the ornamental details in the Library Hall and the Natural History Museum, Playfair furnished careful full size drawings.

The general effect of the buildings is simple and dignified, and their character thoroughly Academic. The material is mainly Craigleith stone, and the detail carving is well worked out. The single quadrangle, measuring 242 feet 6 inches from east to west, by 134 feet from north to south, has a very spacious effect, and is a great improvement on the original plan of 1789, though, as before remarked, the essentials of the design must be regarded as due to Adam. No finer specimens of the neo-classic style could be found than the interior elevations of the Quadrangle, especially on the west, or the eastern front to South Bridge Street.

The Dome.

The original design of Robert Adam provided for a Dome over the eastern portal. The form he had sketched out was not, however, a pleasing one, and no steps were taken to carry out this feature until 1883, when funds came into the possession of the University, bequeathed for the purpose of erecting a Dome, by Robert Cox, Esq., W.S. It was then determined to

carry out the Dome on a new design prepared by R. Rowand Anderson, Esq., LL.D., Architect of the University New Buildings (School of Medicine). The present Dome, though in a less purely classical style than the Adam-Playfair building, is in itself a pleasing and effective structure, and a welcome addition to the architectural features of the city. An admirable finial to this fine architectural work is formed by a vigorous and athletic figure of Youth, bearing the torch of Knowledge, executed in bronze by John Hutchison, Esq., R.S.A. The Fine Art Museum is accommodated in the Dome.

II.—THE UNIVERSITY NEW BUILDINGS.

(SCHOOL OF MEDICINE.)

In 1869 the number of students had risen to more than fifteen hundred, and that of the Professors to thirty-three, while there were seventeen Class Rooms only for their accommodation. A Committee was therefore formed in 1873, and an appeal was made to the public for subscriptions for the purpose of purchasing a site for and erecting complete Class Rooms, Theatres, Laboratories, and Museums for the Faculty of Medicine, with the latest scientific improvements; for reorganising the Class Rooms of the College for the Faculties of Arts, Divinity, and Law; for providing increased and more convenient accommodation for the University Library; for erecting a University Hall for conferring degrees, for holding examinations and other public and academic ceremonials; and for improving to some extent the north front of the College building.

This appeal to the public resulted in subscriptions being received to the amount of £148,548, 2s. 5d., which, with a grant of £80,000 received from Government, and interest, rents, and value received for old material, amounted to the sum of £244,587, 4s. 8d.

These buildings (the University New Buildings, begun in 1878) were partly opened for teaching purposes in October 1880, and having been completed, were transferred by the Committee to the University in October 1888. They are situated

on an irregularly shaped site formerly covered by Teviot Row, Park Street, and Park Place, and were designed by R. Rowand Anderson, Esq., LL.D., Architect, and completed under his supervision.

In them are placed the Lecture Rooms, &c., of the Faculty of Medicine (excepting those of Botany and Natural History), the Museums of Practice of Physic, Anatomy, Chemistry, Obstetrics, Materia Medica, and Surgery; a Students' Reading Room, Students' Common Room, Faculty of Medicine Reception and Reading Room, and Office of the Faculty.

The north court, measuring 127 ft. 6 in. by 85 ft., lies parallel to Teviot Row, from which it is entered by a spacious archway for carriages and a smaller arched passage for pedestrians. The range of buildings on the north side of this court, forming towards Teviot Row the principal frontage of the buildings, is chiefly devoted to the Departments of Materia Medica, Medical Jurisprudence, and Chemistry. On the east of the main entrance, the Medical Jurisprudence Department occupies the ground floor and first floor; its Class Room accommodates 300 Students. To the west of the entrance the ground floor contains a Warder's Office and Students' Reading Room and Library. The first floor on this side affords to Chemistry a Practical Room of 60 ft. by 25 ft.; and over this the Materia Medica Department occupies two floors with the Practical Rooms. The Class Room is at the back, immediately over that of Medical Jurisprudence, and is provided with a Museum, Private Laboratory, Balance Room, &c. To the teaching of Chemistry is further devoted the greater part of the north-west corner of the buildings, the entrance being in the corresponding angle of the court. On the ground floor of the corner block or wing are an Apparatus Room and a Museum; over these a Tutorial Room, and on the second floor a Private Laboratory and Assistants' Room. The Great Class Room, forming the west side of the court, accommodates 400 Students. Its height occupies two storys, and in the floor above are the Laboratories for Senior and Junior Students; while in connection with these to the southward are a Balance Room, and Distilling, Evaporation, and Combustion Rooms. Below the last-

mentioned apartments are a Professors' Room, a Library, and a Gas Analysis Room ; while the Class Room is adjoined on the south by a Workshop, and on the north by a Room used for the preparation of Class Experiments. Rooms are provided for special research in Chemistry in the Tower at the north-west angle. Passing to the south court, which measures 97 ft. by 53 ft., we find that, owing to a fall in the ground, space is here obtained for a commodious basement below the street level of the main frontage. The block running between the two courts contains a magnificent hall, 112 feet by 40 feet wide and 40 feet high, appropriated to the great Anatomical Museum. In order that the wall space of the Museum may be fully turned to account, two tiers of galleries are carried round its interior, and the staircase giving access to these, shows externally as a rounded and corballed projection, which forms a telling feature of the north court. The Museum is lighted from above, and by side windows on the floor level. At the east end, on the level of the ground floor, is a vestibule 40 feet by 27 feet, communicating by means of stairs with the various departments in this block. The east end of the south court is occupied by the Anatomy Class Room, accommodating over 400 students, and presenting towards the south court an effective semicircular outline, and occupying the entire height of the building. In connection with this there are on the east side a Professors' Retiring Room and a Work Room, and in the extreme south-east corner of the buildings a spacious Bone Room. On the floor above the departments of Practice of Physic and Surgery are placed. Each department has a separate Class Room, with accommodation for 400 students, Museum, Practical Rooms, and Professors' Retiring Rooms. The Practice of Physic Laboratory is on the same floor as the Class Room. The Surgical Laboratory is on the basement floor under the Bone Room. Of the range forming the south side of the south court, the whole upper floor, 107 feet 6 inches in length and 39 feet in width, is set apart as the Dissecting Room, the roof being formed in ridges glazed towards the north, so as to afford the steadiest possible light. On the floor below,

adjoining the Anatomy Class Room, is a large Microscope Room, with excellent north light and accommodation for Assistants and Demonstrators. The remainder of this floor is allocated to a Laboratory, 40 feet by 21 feet, for teaching Physiological Chemistry, a Histological Laboratory, and other rooms devoted to this department. This brings us back to the Meadow Walk frontage, where in a square block, which forms a bold feature at the south-west corner, we find the Physiology Class Room, 40 feet by 56 feet. Above this Class Room are a Galvanometer Room and other apartments, allocated to Physiological and Histological purposes. The remainder of the west frontage between this point and the Chemistry Department at the north-west corner is devoted to Midwifery and Pathology. A block, which shows externally a fine semicircular outline, contains the Midwifery Class Room on the ground floor, with entrance from the south-west corner of the court, a Work Room, and a Museum affording 660 superficial feet of space. Above this are the rooms for special Pathological Research, and the Pathology Class Room, capable of holding 300 students, with Anatomical and Chemical Laboratories attached to it, besides a Private Room and Work Room for the Professor.

The style of architecture adopted by Dr Anderson is Italian of the Cinque Cento period. This style, developed in the end of the fifteenth and beginning of the sixteenth centuries, may be regarded as intermediate between the Gothic and the stiff Palladian work, which aims at a mere manipulation of the five orders; and it naturally commends itself on account of its plasticity and adaptability to varied internal arrangements. The main frontage presents, as its central feature, a slightly projecting elevation, pierced by the archway which forms the principal entrance. Over the arch is an ornate window, flanked by pilasters, between which are niches for statuary; and the whole is surmounted by a bold semi-circular pediment, intended to be occupied with a group of sculpture. The façade is three storeys in height except in the projecting west wing, which has an additional floor. On the ground floor the windows are square, and are surrounded with simply moulded architraves. Above

these runs a well-marked string course ornamented with dentils. The first floor windows are round-headed and furnished with architraves, their arches showing boldly in the masonry of the wall. Next comes a broad frieze, relieved at intervals with circular panels, in which carved work will be placed. Over this the string course is repeated ; and the upper floor windows are separated by pilasters, each being divided by a shaft which supports a circular tracery in the window head. The wall is finished at the top with architrave, frieze, and cornice, and crowned with a low-pitched roof, covered with red tiles. The external features and their relative positions have been influenced by the internal arrangements of the building.

THE M'EWAN HALL.

The building which completes the group of the University New Buildings, or School of Medicine, is the M'Ewan Hall, the munificent gift of William M'Ewan, Esq., M.P., Edinburgh. Dr R. Rowand Anderson was also the architect of this building, which stands on the ground formerly occupied by Park Street. The Greek Theatre forms the basis of the design. The internal diameter of the semicircle is 134 ft., and the dimension the other way, including the platform recess, is 107 ft. ; and the height from floor to ring of centre light is 90 ft. On the north-west corner, and connecting the Hall with the present buildings, is placed the Campanile Tower, which is 32 ft. square at the base and rises to the height of 275 ft. The tower will, in the meantime, only be carried up to the height of the other buildings, but it is hoped that at no distant date this noble part of the design may be completed. At the south-west corner is placed the entrance to the principal staircase, and on the outer circumference of the circle are placed two double stairs for access to the galleries. No fewer than seven entrances to the Hall are provided, so that easy access and speedy exit may be secured. One of the chief of these entrances is in the base of the tower. The Hall is capable of holding 3000 people, and in designing it the architect has had in view the special object which it is in-

tended to serve. In it Degrees will be conferred, and Examinations and all public Academic Ceremonials and Concerts connected with the University will be held. A large platform and ample floor space and gallery accommodation have accordingly been provided. Provision has also been made for the accommodation of a great organ and an orchestra of over 300 performers. The space is apportioned as follows :—A flat area, to be occupied by the Graduands on ceremonial days ; a raised amphitheatre of seats following the sweep of the semicircle, and two galleries, also semicircular in form, rising one above the other. Immediately at the back of the amphitheatre is a vaulted fireproof corridor, 12 ft. wide, extending round the half circle from the north-west to the south-west entrance. Above it is the first gallery. The platform is placed on the straight side of the Hall, and is of ample dimensions, with appropriate seats for the Chancellor, the Rector, the Principal, the University Court, the Senatus, the Curators, &c. The system of construction is really that of the double wall. The inner wall which carries the roof is opened up with pillars and arches from the level of the first gallery, thrusts being transmitted by flying buttresses to the outer wall. The roof is domical in form, is deeply panelled, and pierced at the base with circular lights, and has in the centre a skylight 25 feet in diameter. It will be constructed entirely of steel. From the floor to the roof the Hall will be 90 feet in height, and with its imposing dimensions and tiers of stone pillars and arches, it will be one of the most striking and handsome Halls in the kingdom. The external elevation will conform to the early Italian of the rest of the buildings. The great circle of the Hall is divided vertically by powerful buttresses, while horizontally the lines correspond with those of the west façade. The elevation is divided into three stages ; the first is panelled with circular lights, the second is a blank wall, while the third stage is arcaded—there being three arches between each buttress. On the two principal stages the buttresses have niches for figures. The wall is surmounted by a cornice and balustraded parapet, and above this appears the clerestory, which

is carried on the inner circle, while over all rises the domical roof. The Hall was begun in 1889, and will probably be completed in 1892.

III.—REID SCHOOL OF MUSIC.

The School of Music, situated immediately to the south-east of the University New Buildings, was built in the year 1858, from the designs of the late David Cousin. It contains the Music Class Room, with an organ of four manuals and sixty-six stops, enclosed in a handsome carved oak case; and a Museum containing an interesting collection of acoustic and antique musical instruments.

The architecture of the building, which is designed with remarkable taste and refinement, is studied from the best and purest examples of the Italian Renaissance of the early part of the sixteenth century.

University Library.[1]

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IN 1580 Mr Clement Littil or Little, left his books to "Edinbvrgh and Kirk of God thair to reman." This collection of about 300 volumes, chiefly theological (see list in Miscellany of the Maitland Club, vol i., 1834), was a few years afterwards transferred by the Town Council to the University, and thus became the nucleus of the University Library, which was gradually augmented by donations from Citizens of Edinburgh and from alumni of the University, and by annual contributions of Students when they took the Degree of Master of Arts.

The celebrated Poet, Drummond of Hawthornden, bequeathed his library to the University in 1627; and the gift is valuable, both from the eminence of the donor's name, and from the rare specimens of early literature with which the collection is enriched (see *Auctarium Bibliothecæ Edinburgenæ*, 1627).

Among donors may be specified, for the extent and value of their benefactions, Principal Adamson, Dr Robert Johnston, a physician in London; the Rev. James Nairne of Wemyss, in Fife; Dr John Stevenson, Professor of Logic and Metaphysics in the University; and Dr William Thomson, Professor of Anatomy in the University of Oxford. In 1872, the Library received a valuable donation from J. O. Halliwell, the eminent Shakespearean critic, of works relating to Shakespeare, collected at great cost. In 1875 a large collection of Persian and Arabic MSS. was presented by Mr J. B. Baillie of Leys. In 1879 the bequest of an extensive collection of MSS. was received from the executors of David Laing, LL.D. In 1880 the collection of works

[1] The names of the present Librarian and of the Assistant Librarians are given at p. 7. The names of the Librarians from 1635 to the present time will be found in previous Calendars, and also in the Historical Appendix to List of Graduates of the University published in 1889, page 113.

on Economic Science formed by Professor Hodgson were presented to the Library by Mrs Hodgson. In 1882 a valuable collection of works on Sanskrit Literature was presented by the family of Dr John Muir. In 1886 Mr Thomas Stratton bequeathed to the Library 110 works bearing on the study of Celtic; and in 1889 William Mackinnon, Esq. of Balmakill, having purchased the library of the late Dr Cameron of Brodick, an eminent Celtic scholar, at a cost of £600, placed the books at the disposal of the University. This same year saw the bequest of a collection of MS. Shakespeariana by Mr Halliwell-Phillipps; and the presentation, by his widow, of a number of volumes from the library of the late Professor Wilson.

The University Library contains about 177,000 printed volumes, and about 3000 volumes of MSS., many of which are of great interest and value.

The University possesses a number of valuable pictures and busts, which are kept in the Library and the Senate Hall.

The Library Hall, and the suite of rooms connected with it, occupy the south side of the College quadrangle.

The Library is open every lawful day (vacations excepted) :—

Winter Session, 10 to 4 (except Saturdays, 10 to 1).
Summer Session, 10 to 3 („ 10 to 12).

The READING ROOM (see page 58).

The following Regulations, enacted in 1862, relate to the general management of the Library :—

I. The Librarian has the ordinary Management of the Library, subject to the superintendence of the Library Committee of the Senatus Academicus.

II. The Senatus Academicus annually appoints a Committee of their own number, called the Library Committee, whose duty it is, under the authority and subject to the directions of the Senatus, to take special charge of the affairs and business of the Library. This Committee consists of not less than five members, of whom three are a quorum; and one member at least of the Finance Committee is also a member of the Library Committee.

III. The Librarian and the Assistant Librarians are appointed by the Senatus Academicus, who have the power of suspending or dismissing them, subject to an appeal to the University Court.

IV. All books ordered for the Library are sent direct to the Librarian, and forthwith entered by him in the Catalogue, and noted with distinguishing marks; and no person is allowed to use or borrow any book until it has been entered in the Catalogue, and noted.

V. The Senatus Academicus, or their Library Committee, have power, from time to time, to make provision for the manner in which the ordinary business of the Library, in regard to borrowing and consulting books, is conducted, by establishing a regular and authentic record of borrowing and returning books on such a system as secures their due return and preservation.

VI. The Librarian is required from time to time to prepare a list, to be submitted to, and adjusted and approved by, the Senatus, and when so adjusted and approved, to be kept by the Librarian, of such books, manuscripts, and other works, as ought not to be lent out of the Library, and which shall not be lent out on any terms; and the Senatus make regulations for allowing access to such works for consultation.

VII. The Librarian is required from time to time to prepare a list, to be submitted to, and adjusted and approved by, the Senatus, and when so adjusted and approved, to be kept by the Librarian, of such works as ought not to be lent out of the Library, except upon special application, and by special permission of the Library Committee ; and the Senatus, from time to time, make general regulations as to the conditions under which such works may be borrowed ; and in addition to such general regulations, the Library Committee may, in each individual case of borrowing such works, impose such special conditions as they may think necessary or expedient : Provided always, that every such special permission, and all such additional conditions imposed by the Library Committee, are entered in the Minute-book of the Committee.

VIII. A general Inspection of the Library of the University, and of the record kept, as above provided by Section V., of the borrowing and returning of books, takes place *annually in the second week of October.*

IX. During the period of the annual Inspection the Library is closed, and all works whatever, and by whomsoever borrowed, must be returned to the Library before the commencement of such period, under a penalty, previously fixed and publicly notified by the Senatus, of not less than one shilling a volume; and in the event of any volume not being returned before the expiration of one week after the last day of the inspection, the fine is repeated weekly until such volume is returned, or until a copy of the work of the same edition, and of equal value is, at the expense of the borrower, placed in the Library in its stead: Provided always, that the amount of the fine in the case of works borrowed by special permission as aforesaid, may be fixed either by general regulation of the Senatus, or by special condition imposed by the Library Committee in any individual case.

X. The use of the Library *by persons not being Students of the University* is subject to the following regulations:—

1. Each Member of the Senatus Academicus is entitled to have in his possession, at one time, twenty-five volumes but not more.
2. Each Member of the General Council is, in each year in which he shall have paid a subscription to the Library of ten shillings and sixpence, entitled to have in his possession at one time four volumes, but not more: Provided always, that a payment, instead of such yearly subscription, of a composition of five guineas entitles a person to the like privilege for life. In regard to the use of the Library by Members of the General Council, the year is held to date from the *fifteenth day of October.*
3.[1] In consideration of the Annual payment of five pounds by

[1] In abeyance since March 1887.

the Royal College of Surgeons to the University, each Fellow of the College resident within ten miles of Edinburgh, is, in each year in which he pays a subscription of one guinea to the Library of that University, entitled to have in his possession at one time ten volumes, but not more. The College of Surgeons and the members thereof, as such are not entitled, in virtue of any former agreement or otherwise, to any privilege or use of the Library, except as herein is specially provided, and as regards such use of the said Library the year is held to date from the *fifteenth day of October.*

4. Subject always to the provision as to the return of books at the annual period of inspection, every person in each of the above classes is entitled to retain each book for one month from the date of borrowing, if the book has been borrowed at any time between the *first day of October* and the *thirtieth day of April inclusive*, and for two months from the date of borrowing, if the book has been borrowed at any time between the *first day of May* and the *thirtieth day of September inclusive;* and further, after the expiration of such period of one month or of two months, as the case may be, he is entitled to retain each book until the annual period of inspection, unless notice is received by him from the Librarian, requiring the return of such book, which notice shall be issued on application being made for the same by any person entitled to the use of the Library, or by order of the Senatus Academicus, or of the Library Committee. The form of notice requires the return of the book within a certain short period, to be specified therein, under a penalty of not less than one shilling a volume, if the book be not returned within such period, and after the expiration thereof, under a further penalty of sixpence a volume for each day, as long as the book is not returned, until the amount of the fine exceeds the sum for which the book can be replaced in the Library, such penalties to be also specified in such notice. In

the event of the Library possessing more than one copy of the book so applied for, and of all the copies being out of the Library, such notice as aforesaid must be sent to the earliest borrower.

XI. The use of the Library by *Matriculated Students of the University* is regulated as follows :—

1. Every Matriculated Student is entitled to have in his possession two volumes at one time ; and is entitled to retain any book for two weeks from the date of borrowing ; and further, to re-borrow any book for successive periods of two weeks, unless an application for the same shall, in the meantime, have been made by another person entitled to the use of the Library. It is in the power of the Senatus Academicus, if they shall think it expedient, to allow Students, either generally or during any particular period of the year, to be in possession of more than two volumes at a time.

2. It is in the power of the Senatus Academicus, from time to time, to make such regulations as to a deposit of money by Students borrowing books from the Library, as they may think expedient ; and also to regulate the use of the Library by Students in consulting books in the Library itself.

   [Every Student before borrowing books must exhibit his Matriculation Ticket and at least One Professor's Ticket, and deposit £1, after which his name will be enrolled in the Library books.]

3. No certificate of attendance upon a class may be granted by a Professor to any Student without the production of evidence to the Professor that the Student has duly returned all books which he may have borrowed from the Library.

XII. Students enrolled by the University of Edinburgh as attending the lectures of extra-academical teachers in Edinburgh (under the sixth sub-section of the sixth section of Ordinance, No. 8, Edinburgh, No. 3), are entitled to the like privileges in

connection with the Library of that University, and are subject in the same manner to any regulations to be made by the Senatus, as Matriculated Students of the University; and no certificate of attendance on the lectures of any such teacher may be given to any Student so enrolled without the production of evidence to the teacher that the Student has duly returned all books which he may have borrowed from the Library.

XIII. It is in the power of the Senatus Academicus, from time to time, to grant the use of the Library to such extent, and on such conditions, as they may think expedient, to persons for purposes of literary research, and that whether such persons are members of the University or not. But no such privilege can in any case be granted except by minute of the Senatus, specifying the grounds on which the grant is made, and the conditions which have been attached thereto, an extract of which minute must be forthwith transmitted to the University Court.

XIV. All grants of the use of the Library made by the Senatus Academicus, in pursuance of the preceding section, terminate at the annual period of inspection of the Library, but may be renewed under like conditions, if again applied for, on the expiration of that period: Provided always, that the Library Committee may be empowered by the Senatus to renew any such grant until the first meeting of Senatus after the expiration of the annual period of inspection, but no longer.

XV. In the event of any book being lost or injured while in the possession of a person entitled to the use of the Library, he is liable either to replace the same, or to pay such fine, either as representing the value of the book, or otherwise, as may be fixed by the Senatus Academicus, or by the Library Committee, in the event of their having been empowered by the Senatus to fix the amount of such fines.

XVI. So long as any person remains in possession of a book which he is not entitled to retain, or allows any fine incurred by him to remain unpaid, the right of such person to borrow or retain any books whatever, or to exercise any of the privileges of the Library, is suspended and remains in abeyance.

XVII. No book can, in any case, be given out of the Library except to the borrower in person, or to some one having written authority from him.

XVIII. On the expiration of the annual period of inspection, the Librarian must report to the Senatus Academicus in reference to the year then ended :—

1. The particulars of every case of admission to special privileges in the use of the Library :
2. The particulars of every case in which a person's right to the use of the Library has been suspended, or is in abeyance :
3. Every case of a book belonging to the Library having been replaced at the expense of a person entitled to the use of the Library :
4. A list of all books belonging to the Library known or found at the time of the inspection to be amissing or seriously injured :
5. Any other matter which the Librarian may think it of importance to bring under the notice of the Senatus, or regarding which the Senatus may have directed him to report :

and the Senatus is required to forward a copy of the Librarian's Report to the University Court with their remarks.

XIX. At the conclusion of the annual period of inspection, a list is made of all persons who may have failed to return by that time any books borrowed by them, or to pay any fines incurred, along with the names of the books so unreturned, and the amounts of the fines then due ; and this list is exhibited in a conspicuous place in the Library ; and no name may be removed therefrom, until in each case the book or books be returned or replaced, or the fine or fines, which may have become due, be paid.

The following Supplementary Regulations are now in force :—

I. The provision of Sub-section 1 of Section XI. of the above Regulations is limited in its application to the use of the Library by Students who are not Masters of Arts of the University ; and,

as regards such Students, it is in the power of the Senatus Academicus, if they think it expedient, to fix a certain longer period than two weeks from the date of borrowing as the period during which they are entitled to retain books, and that either generally or as applicable to any particular portion of the year, as the Senatus may think expedient. Any such extended period, and also the portion of the year to which the same applies, must be specified in the minute of the Senatus authorising the same, and an extract of such minute must be forthwith transmitted to the University Court.

II. Subject to the preceding Regulations, and specially to the Regulations in Sub-section 4 of Section X., the following classes of persons are entitled to the use of the Library, to the extent and under the conditions hereinafter specified, that is to say :—

1. Every person who has retired, or who shall hereafter retire, from the office of Principal or Professor on a retiring allowance, is entitled to have in his possession at one time ten volumes, but not more.
2. Any assistant to a Professor, to whom the Senatus Academicus think it expedient to grant the privilege of the Library, is entitled to have in his possession at one time ten volumes, but not more.
3. The Librarian is entitled to have in his possession at one time ten volumes, but not more ; and any Assistant Librarian to whom the Senatus Academicus think it expedient to grant the privilege of the Library is entitled to have in his possession at one time four volumes, but not more : Provided always, that all books borrowed by the Librarian, or by any such Assistant Librarian as aforesaid, are duly and regularly entered in the ordinary Records of the Library as being so borrowed, in the same manner as books borrowed by other persons.

READING ROOMS.

I. University (Old) Buildings.

There is attached to the Reading Room of the University Library a separate collection of books set apart for the consultation of Students. Printed Catalogues of this collection may be purchased at the price of 3d. each.

Any Student wishing to consult books from this Reading Room Collection must insert in one of the slips provided for the purpose the number of his Matriculation Ticket, his Name and Residence, and the Title of the Book he may wish to consult, and present the slip to the Librarian in attendance. Each separate Book must be applied for by means of a separate slip.

Each slip so presented will render the person who has signed it responsible for the book named upon it. The counterfoil of slip should, therefore, in each case be re-claimed from the Librarian in attendance, when the Book is returned, or whenever the Book applied for is not available.

Every volume must be returned by the person who has used it, before he leaves the Reading Room. Students are forbidden to leave on the table the Books used by them ; they are required to place them in the Librarian's hands, and to demand back the counterfoils of their slips. To prevent confusion, this should be done a few minutes before the close of each hour by those who have to attend classes at the commencement of the next hour.

In addition to the books in the Reading Room Collection, each Student is allowed to consult in the Reading Room Two Volumes daily from the General Library, provided always that he has handed in on the previous day, before 2 o'clock P.M., slips applying for these two works. The same rules will then apply to such books as to those consulted from the Reading Room Collection.

No conversation, or noise likely to disturb readers, is permitted in the Reading Room.

The Librarian is responsible for the management of the Reading Room. Any point of difficulty that may arise must be

referred to him for decision, or, if necessary, through him to the Library Committee.

Every Student, on first applying for books in the Reading Room, must exhibit his Matriculation Ticket for Registration in the Book kept for the purpose in the room.

All books taken into the Room from the General Library shall be carefully examined and returned to their place in the General Library each day. No books shall be issued from the General Library, for use in the Reading-Room, after 3.20 in Winter or after 2.30 in Summer; and all books from the General Library shall be given up in the Reading-Room at 3.45 in Winter and 2.45 in Summer.

In the beginning of 1888 the Senatus Academicus sanctioned the opening of the Reading-Room for three nights a week during the Winter Session, between 8 and 10 P.M. Books required from the General Library must be demanded in writing before 3 o'clock.

II. University New Buildings.

In the University New Buildings is a Reading Room containing Books of Reference for those attending the Classes in the Faculty of Medicine. It is open daily, under Regulations similar to the above, from 9 A.M. to 5 P.M. On Saturday from 9 A.M. to 12 noon.

THEOLOGICAL LIBRARY.

This Library was founded in 1698 for the special use of Students in Theology. It contains above 10,000 volumes. The management, by the amended constitution (1863), is vested in a Committee of six Curators, chosen by ballot, by the Cives of the Library, from their own number. Students of Divinity of this University, or any who have been Students of Divinity at any Scottish University, are admitted as Cives of the Library on payment of an annual contribution of two shillings and sixpence in the former case, and of five shillings in the latter. No one who, when a Student of Divinity in this University, has failed to enter as a Civis, is in any after year allowed to do so, until

he has paid up the arrears of two shillings and sixpence for each year of his Theological Course in which he has failed to pay the said contribution. No Civis can be elected a Curator unless he be at least in the second year of his attendance at the Divinity Hall. The election takes place in the second week of December, one-third of the Curators going out annually by rotation. The Curators elect one of their own number to be Treasurer. The Curators and Treasurer report the state of the funds, &c., to the Cives, the Theological Faculty, and the Senatus Academicus. The books purchased are selected by the Curators, subject to the approval of the Faculty of Divinity, and are restricted to theological works, and works subservient to theological study. The Professor of Divinity, who is *ex officio* Honorary Librarian, appoints annually an acting Librarian. Books may not be kept out of the Library longer than two months.

PORTRAITS AND BUSTS IN THE SENATE HALL, LIBRARY, COURT ROOM, AND ANATOMICAL MUSEUM.[1]

I.—*Portraits of Principals, Professors, and others, in Senate Hall.*

1. Robert Rollock, first Principal of the University (1585-1599).
2. Robert Leighton, Principal of the University (1653-1662).
3. Andrew Cant, Principal of the University (1675-1685).
4. William Carstares, D.D., Principal of the University (1703-1716), by Aikman.
5. William Robertson, D.D., Principal of the University (1762-1793), by Raeburn.
6. Adam Ferguson, LL.D., Professor of Moral Philosophy (1764-1785), by Raeburn.
7. Andrew Dalzel, M.A., Prof. of Greek (1772-1805), after Raeburn.
8. John Robison, LL.D., Professor of Natural Philosophy (1774-1805), by Raeburn.

[1] In order to honour and perpetuate the names of the individuals who have founded Scholarships, Bursaries, and new Chairs in the University, the Senatus Academicus has made arrangements for placing Busts or Portraits of them in the Library and University Court Room.

Regarding as Benefactors the eminent Professors who have elevated the character of the University by their writings or discoveries, the Senatus is anxious to procure Portraits or Busts of James and David Gregory, Colin Maclaurin, Matthew Stewart, Dr Cullen, Joseph Black, Dr James Gregory, Dr Alison, Dr Chalmers, Sir Chas. Bell, Lord Woodhouselee, Dr Thos. Chas. Hope, Professor Miller, Professor Ross, and Professor Macdougall.

9. James Finlayson, D.D., Prof. of Logic and Metaphysics (1786-1808).
10. John Playfair, M.A., Professor of Mathematics, and afterwards of Natural Philosophy (1785-1819), by Raeburn.
11. Thomas Brown, M.D., Professor of Moral Philosophy (1810-1820).
12. Andrew Duncan, M.D., Senior Professor of Institutes of Medicine (1789-1819).
13. George Husband Baird, D.D., Principal (1793-1840), after Geddes.
14. Sir John Leslie, Professor of Natural Philosophy (1819-1833), after Sir David Wilkie.
15. John Bruce, Professor of Logic and Metaphysics (1774-1786), after Raeburn.
16. John Donaldson, Professor of Music (1845-65).
17. John Knox (1505-1572).
18. George Buchanan (1506-1582). 2 Portraits.
19. John Napier of Merchiston, Inventor of Logarithms (1550-1617).
20. James Thomson, Poet (1700-1748).
21. Hugh Blair, D.D., Professor of Rhetoric (1762-84), by Martin.
22. Robert Graham, M.D., Professor of Botany (1820-1845), by Colvin Smith.
23. J. H. Balfour, M.D., Professor of Botany (1845-78), by Sir Daniel Macnee.
24. David Hume, by Lady Abercromby.
25. John Muir, D.C.L., LL.D., presented by Sir William Muir and Mrs Maclaren.
26. Dr Chas. Murchison, presented by Murchison Memorial Committee.
27. Dr Alexander Monro, *secundus*.
28. Dr Alexander Monro, *tertius*, by Sir J. Watson Gordon.

II.—*Portraits and Busts in Library.*

PORTRAITS.

1. John Lee, D.D., LL.D., M.D., Principal of the University (1840-1859), by Sir John Watson Gordon.
2. Alexander Brunton, D.D., Professor of Hebrew and Oriental Languages (1813-1848), by Sir John Watson Gordon.
3. John Wilson, Professor of Moral Philosophy (1820-1853), by Scott Lauder.
4. Nicolson Bain, University Librarian, by William Dyce, R.A., presented by his daughters.

BUSTS.

1. John Lee, D.D., LL.D., M.D., Principal, &c., by Slater.
2. Alexander Monro *(primus)*, M.D., Professor of Anatomy (1720-1754), by Flaxman.
3. Wm. Cullen, M.D., Prof. of Chemistry (1755-1790), by Gowans.
4. John Playfair, M.A., Professor of Mathematics, and afterwards of Natural Philosophy (1785-1819), by Chantrey.

5. John Thomson, M.D., Prof. of Gen. Pathology (1831-1842), by Steell.
6. Thos. Chas. Hope, M.D., Prof. of Chemistry (1795-1844), by Steell.
7. Macvey Napier, M.A., Prof. of Conveyancing (1825-1847), by Slater.
8. George Dunbar, M.A., Professor of Greek (1805-1852), by Slater.
9. James Pillans, LL.D., Prof. of Humanity (1820-1863), by Slater.
10. Robert Jameson, Professor of Natural History (1804-1854), by Steell.
11. Edward Forbes, Professor of Natural History (1854-55), by Steell.
12. Robert Blair, Professor of Practical Astronomy (1786-1834).
13. Dugald Stewart, Prof. of Moral Philosophy (1775-1810), by Joseph.
14. Sir John Leslie, Professor of Natural Philosophy (1819-1833), by Steell, after Joseph.
15. Andrew Duncan, senior, Professor of Institutes of Medicine (1789-1819), by Slater.
16. Sir William Hamilton, Bart., Professor of Logic and Metaphysics (1836-1856), by Brodie.
17. Sir Robert Christison, Bart., Professor of Materia Medica, by Brodie.
18. Robert Lee, D.D., Prof. of Biblical Criticism (1847-1860), by Brodie.
19. George James Allman, Professor of Natural History (1855-1870), by Hutcheson.
20. Sir Jas. Y. Simpson, Bart., Prof. of Midwifery (1840-1870), by Brodie.
21. James Syme, Professor of Clinical Surgery (1833-1869), by Brodie.
22. John Schank More, Professor of Scots Law (1843-1861).
23. Andrew Brown, Professor of Rhetoric (1801-1835).
24. J. H. Bennett, Professor of Institutes of Medicine (1848-1874), by Brodie.
25. Thos. Jackson Crawford, D.D., Professor of Divinity (1859-1876), by Brodie.
26. Thomas Laycock, M.D., Professor of Practice of Medicine (1842-55), by Clark Stanton.
27. W. B. Hodgson, LL.D., Professor of Political Economy (1871 1880), by Brodie.
28. W. R. Sanders, M.D., Professor of Pathology (1869-1881), by Brodie.
29. Sir Wyville Thomson, Prof. of Nat. Hist. (1870-1882), by Hutcheson.
30. H.R.H. the Duke of Edinburgh, by Steell.
31. The Hon. Lord Rutherford, by Theed.
32. A. H. Rhind of Sibster, by Brodie.
33. Sir John Watson Gordon, after Park.
34. John Edward Baxter, Esq., by Hill.
35. Sir William Knighton, M.D., by E. H. Bailey.
36. Sir Alexander Grant, Bart., Principal (1868-84), by Charles M'Bride, presented by subscribers, chiefly Members of Senatus.
37. William E. Aytoun, Professor of Rhetoric and English Literature (1845-65), after Park, presented by his Sisters.
38. John Wilson, Professor of Agriculture (1854-85), by S. Williamson, Esher, presented by Mrs Wilson.

39. Alexander Dickson, Professor of Botany (1879-87), by Charles M'Bride, presented by Subscribers.
40. Sir Cowasjee Jehangir Readymoney, K.C.S.I., by Woolner, presented by Dr Birdwood.

III.—*Portraits in Court Room.*

1. Sir David Baxter of Kilmaron, Bart., by Sir John Watson Gordon.
2. J. Stewart Hepburn, Esq., of Colquhalzie, by Colvin Smith.
3. Sir John M'Pherson, late Governor-General of India, after Reynolds.
4. George Heriot, after the original in Heriot's Hospital.
5. W. Patrick, Esq., of Roughwood, after Colvin Smith.
6. George Parker Bidder, Esq., by Alfred Dever.
7. The Rt. Hon. John Inglis, Lord Justice-General, by Sir J. W. Gordon.
8. Sir William Fettes, Bart., after Raeburn.
9. General John Reid, Founder of the Chair of Music (1735-1803).
10. Lord Provost Elder, by Raeburn.
11. Daniel Ellis, Esq., by Colvin Smith.
12. Captain Thomas Drummond, by Pickersgill.
13. Sir Roderick Impey Murchison, Bart., by Pickersgill.
14. John Muir, LL.D., D.C.L., by John Lorimer.
15. Andrew Vans Dunlop, by John Lorimer.
16. Mrs M. S. Tyndall Bruce, Benefactress of the University, by Sir Francis Grant (1888), presented by Mr Andrew H. Tyndall Bruce.

IV.—*Portrait in Music Class Room.*

1. Sir Herbert S. Oakeley, Mus. D., LL.D., by Chas. K. Robertson.

V.—*Busts in Anatomical Museum.*

1. Alex. Monro (*secundus*), M.D., Prof. of Anatomy (1758-1798).
2. John Goodsir, F.R.S., Prof. of Anatomy (1846-1867), by Brodie.

VI.—*Bust in Room in the Dome.*

1. Robert Cox, Esq., Founder of the Dome, by J. S. Rhind, after Brodie, presented by Robert Cox, Esq. of Gorgie.

TORRIE FINE ART COLLECTION.

Sir James Erskine of Torrie, by a Will, dated April 1834, bequeathed to the University his Pictures, Bronzes, and Marbles, "for the purpose of laying a foundation for a GALLERY for the encouragement of the Fine Arts." The collection is at present temporarily deposited in the National Gallery, until funds can be obtained for its suitable display in the College, and for carrying more fully into effect the intentions of the testator.

The Pictures, forty-five in number, include choice specimens of the works of different Masters, especially in the Flemish and Dutch Schools. The Marbles, seventeen in number, and twenty-three Bronzes, have been

chosen with a correct appreciation of the merits of this department, and the whole collection reflects credit on the taste and public spirit of Sir James Erskine.

The following is a Catalogue of the Collection :

I.—Pictures in National Gallery.

The numbers of the Pictures in the National Gallery Catalogue are given within parentheses.

1. A Squall, by Ludolf Bakhuizen, *b.* 1631, *d.* 1708. Canvas, 23 by 17 in., oblong. (512.)
2. A Young Noble and Lady, by Honthorst? Canvas, 29 by 22 in., upright. (561.)
3. Rocky Landscape, with Figures,—Sunset, by Andries Both (?), *b.* 1612. Canvas, 23 by 18 in., oblong. (530.)
4. Landscape and Figures, by Jan Both, *b.* 1610. Canvas, 42 by 41 in., upright. (509.)
5. Landscape, with Mounted Figures, by Jan Both. Panel, 22 by 16 in., oblong. (528.)
6. Venus and Adonis, by Paolo Veronese, *b.* 1528, *d.* 1588. Canvas, 32 by 24 in., upright. (499.)
7. Cattle Piece, by Nicolaus Berghem, *b.* 1620, *d.* 1683. Panel, 12½ by 9¾ in., upright. (552.)
8. Herd with Cattle, by Nicolaus Berghem. Panel, 12 by 9¼ in., oblong. (361.)
9. Skirmish of Cavalry, by Jacques Courtois (Borgognone), *b.* 1621, *d.* 1676. Canvas, 22 by 13 in., oblong. (335.)
10. Skirmish of Cavalry, companion picture to No. 9, by Jacques Courtois (Borgognone). Canvas, 22 by 13 in., oblong. (500.)
11. Party at Cards, by Jean le Duc, *b.* 1636, *d.* 1692 or 3. Panel, 25 by 17 in., upright. (556.)
12. Land Storm, by Gaspar Dughet (Poussin), *b.* 1613, *d.* 1675. Canvas, 32 by 22 in., oblong. (543.)
13. Architectural Piece, with Figures, by Giovanni Ghisolfi, *b.* 1623, *d.* 1683. Canvas, 46 by 38 in., upright. (508.)
14. Classical Ruins, with Figures, companion picture to No. 13, by Giovanni Ghisolfi. Canvas, 46 by 38 in., upright. (515.)
15. Interior of Cottage, with Peasant's Family, by Jean Baptiste Greuze, *b.* 1725, *d.* 1805. Canvas, 32 by 25 in., oblong. (554.)
16. Forest Scene, with Deer, by Jan Van Der Heijden, *b.* 1637, *d.* 1712. Panel, 11¼ by 8¾ in., oblong. (551.)
17. Forest Landscape, by Minderhout Hobbema, *b.* 1638, *d.* 1709. Panel, 36 by 21 in., oblong. (525.)
18. A Woodland Scene, with river-bank in the foreground, by Minderhout Hobbema. Panel, 26 by 18 in., oblong. (513.)
19. Horsemen halting at an Italian Winehouse, by Karel Du Jardin, *b.* 1635 (?), *d.* 1678. Canvas, 34 by 32 in., oblong. (505.)

20. Farrier's Shop, by Karel Du Jardin. Canvas, 17 by 15 in., oblong. (550.)
21. Waggon halting at the door of an Alehouse, by Jan Lingelbach, *b.* 1625, *d.* 1687. Canvas, 18 by 15 in., upright. (502.)
22. Progress of Louis XIV., in a State carriage, with cortège, by Anton Frans Van Der Meulen, *b.* 1634, *d.* 1690. Canvas, 33 by 24 in., oblong. (544.)
23. Interior of a Cathedral (the clear figures by Van Thulden), by Peeter Nefs, *b.* 1570, *d.* 1651. Panel, 15½ by 11¾ in., oblong. (359.)
24. Dutch Landscape; sunset effect, with bathers in a river, by H. Ten Oever. Canvas, 34 by 26 in., oblong. (526.)
25. Battle Piece, by Giulio Romano, *b.* 1498, *d.* 1546. Canvas, 25 by 18 in., upright. (557.)
26. A Dead Christ, by Giulio Cesare Procaccini, *d.* 1626. Canvas, 17 by 11 in., oblong. (372.)
27. Recesses of a Forest, with effect of morning light descending through the interstices of the trees, by Adam Pynacker, *b.* 1621, *d.* 1673. Canvas, 37 by 20 in., upright. (536.)
28. Woodland Scene, by Rembrandt? Canvas, 28 by 21 in., oblong. (548.)
29. Sketch for a Mountain Landscape, by Rembrandt, *b.* 1607, *d.* 1669. Panel, 16 by 12 in., oblong. (553.)
30. An Ecce Homo, by Guido Reni, *b.* 1575, *d.* 1642. Canvas, 22 by 17 in., upright. (517.)
31. Rocky Landscape and Figures, by Salvator Rosa, *b.* 1615, *d.* 1673. Canvas, 38 by 20 in., oblong. (537.)
32. Wood Scene on the Banks of a River, by Jacob van Ruisdael, *d.* 1682. Canvas, 29 by 24 in., oblong. (549.)
33. Landscape, by Jacob van Ruisdael. Canvas, 76 by 53 in., oblong. (520.)
34. Wolf Hunt, by Franz Snyders, *b.* 1579, *d.* 1657. Canvas, 94 by 69 in., oblong. (545.)
35. Boar Hunt, by Franz Snyders. Canvas, 100 by 70 in., oblong. (514.)
36. Physician and Patient, by Jan Steen, *b.* 1626, *d.* 1679. Canvas, 27 by 22 in., upright. (560.)
37. *Pasticcio*, or imitation of a Venetian picture of the Bassano School, by David Teniers, *b.* 1610, *d.* 1690(?) Canvas, 18 by 12 in., oblong. (558.)
38. Peasants playing at Skittles, by David Teniers. Panel, 22 by 14 in., oblong. (501.)
39. Sea Piece, unknown. Canvas, 22 by 16 in., oblong. (529.)
40. Virgin and Child, and St Catherine, Venetian School. Panel, 19 by 16 in., upright. (380.)
41. Landscape and Figures, by Adriaan van de Velde, *b.* 1639, *d.* 1672. Canvas, 42 by 32 in., oblong. (516.)

42. Cattle and Herdsmen, by Adriaan van de Velde. Canvas, 15 by 12 in., oblong. (503.)
43. Fishing Boats in a Calm, by Willem van de Velde, *b.* 1633, *d.* 1707. Canvas, 22½ by 17 in., oblong. (518.)
44. Martyrdom of St Andrew, by Domenichino, *b.* 1581, *d.* 1641. Canvas, 17 by 13 in., oblong. (504.)
45. Figure of Bather, by Domenichino. Canvas, 21 by 17 in., upright. (527.)

II.—Marbles in National Gallery.

1. Group of Arria and Pætus, in Italian marble, 38 in. high.
2. Copy of the Crouching Venus, in Carrara marble, 29 in. high.
3. Copy of Venus leaving the Bath, 28 in. high.
4. Antique Torso of a Nude Venus, 34 in. high.
5. Antique, small Statue of a Youth, 20 in. high.
6. Small antique figure of a Draped Venus, about 15 in. high.
7. Antique Draped Female, without head or arms, 31½ in. high.
8. Antique small Draped Figure, 21 in. high.
9. Column of *Giallo Antico*, 46 in. high.
10, 11. Two fine Vases of *Rosso Antico* porphyry, with handles, 19¼ in. high, and 12 in. diameter at mouth.
12. Small Vase of *Rosso Antico* marble, 16½ in. high.
13. Vase of *Verde Antico* porphyry, 23¾ in. high.
14, 15. Two small Vases of the same porphyry, 13 in. high.
16, 17. Two Vases of grey granite, 15¾ in. high, both placed on plinths of *Giallo Antico*.

III.—Bronzes in National Gallery.

1. Bronze Head of Plotina, Empress of Trajan, heroic size, 42 in. high.
2. Anatomical Figure of a Horse, 35 in. high from the plinth.
3. Small group of Dirce, 21 in. high.
4. Minature copy of the group of *Beauty chaining Strength*, 12 in. high.
5. Miniature copy of the Venus de Medici, 24 in. high.
6. Ditto of the Fighting Gladiator, 29 in. high.
7. Ditto of the Arrotino, 14½ in. high.
8. Ditto of the group of the Athletæ, 16 in. high.
9. Ditto of the Rape of the Sabines, after Giovanni Bologna.
10. Ditto of his Mercury, 20½ in. high.
11. Ditto of Michelagnolo's Night.
12. Ditto of Michelagnolo's Aurora, 23 in. long and 11 in. high.
13. Ditto of Venus, 15 in. high.
14. Ditto of Samson slaying the Philistines, after Adrien Van Vries, 30 in. high.

15. Ditto of a Youth with one arm on his head and the other behind his back, 8 in. high.
16. Ditto of the Florentine Boar, 8 in. high, including the plinth.
17. Ditto of Jupiter on his eagle, $4\frac{1}{2}$ in. high.
18. Cupid resting on one foot as if about to fly, 13 in. high.
19. Antique bronze figure of a bull, 10 in. high.
20. Antique bronze of a he-goat, 8 in. long.
21. Chased Vase, from the *Villa Borghese*, the plinth inscribed "G. Zoffolif," 12 in. high, $6\frac{3}{4}$ in. wide.

22, 23. Two Chased Vases from the *Villa Borghese*, with similar inscriptions, 14 in. high, 11 in. wide.

Museums.

THE University contains the following Museums, several of which belong partly to the Professors of the respective subjects :—

1. The NATURAL PHILOSOPHY MUSEUM contains a large and very valuable collection of physical apparatus, chiefly of modern construction.

2. MUSEUM OF MUSIC AND MUSICAL INSTRUMENTS. — A very interesting and valuable collection of acoustic and antique musical instruments.

3. GEOLOGICAL MUSEUM.—This collection is for class purposes. It exhibits the characters of minerals and rocks, and the typical fossils of the different geological systems.

4. FINE ART MUSEUM.—A small collection of casts, photographs, and drawings, illustrating the main points in the history of classical art. The collection is housed in the Dome above the portal of the University.

5. MUSEUM OF THE ROYAL BOTANIC GARDEN. — This Museum is open to Students.

6. PRACTICE OF PHYSIC MUSEUM.—The Practice of Physic Museum contains pathological specimens, drawings, models, diagrams, and charts, the property of the Professor.

7. THE ANATOMICAL MUSEUM.—This Museum was founded in 1800 by Dr Monro, *secundus*, who presented his own Anatomical Collection, and that of his father, to the University, "to be used by his future successors in office for the purpose of demon-

strating and explaining to the Students the structure, physiology, and diseases of the human body." In the year 1859, Sir David Monro, M.D., presented a collection of anatomical preparations, which had been formed by his father, Dr Alexander Monro, *tertius*. Numerous additions were also made to the Museum by the late Professor Goodsir, more especially in the department of Comparative Anatomy, and on his death the Senatus Academicus purchased from his representatives his Private Museum, which has been added to the Collection. The Museum now contains several thousand specimens in illustration of Human Anatomy, both normal and pathological, and of Comparative Anatomy.

The Conservator will be glad to receive contributions of rare and interesting specimens from Graduates and former Students of the University. He is especially desirous of making the collection thoroughly representative of the osteology of the different Races of Men, and requests the gift of skulls and other bones of the skeleton from present and former pupils.

The Collection was transferred in the Session 1884-5 to the University New Buildings for the School of Medicine in Teviot Row, where it is arranged in a large and handsome Hall possessing two galleries. It is open at certain hours to all matriculated students. The pathological collection is placed in the upper gallery. The spirit-preparations in illustration of normal Human and Comparative Anatomy are arranged in the lower gallery, The osteological collection is disposed in the cases on the floor of the Museum, and suspended in the centre of the Hall. In 1887 the Henderson Trustees committed to the custody of the Conservator of the Museum their valuable collection of crania and casts.

Conservator of the Museum, the Professor of Anatomy ; Assistant-Conservator, Mr James Simpson.

8. Chemistry Museum.—Sir Lyon Playfair, on his resignation of the Chair of Chemistry, presented to the University the collection of chemical substances which he used in illustrating his lectures. This collection has been from time to time

increased by presents from chemical manufacturers and others and also by the addition of substances prepared in the University Laboratory.

9. THE OBSTETRICAL MUSEUM.—With the exception of a few wet and dry preparations left by Professor Hamilton, contains instruments, preparations, models, and diagrams, collected by Sir James Y. Simpson, and added to by the present Professor of Midwifery, to whom they belong.

10. THE MUSEUM OF NATURAL HISTORY.—The old Museum of Natural History was established in 1812 in connection with the University. It contained Zoological, Geological and Mineralogical Collections. The greater portion of it was formed by the exertions of Professor Jameson, who was for fifty years Professor of Natural History and Regius-Keeper of the Museum. In 1854 the Museum was transferred by the Town Council, at that time the Patrons of the University, to Government, under whose control it has since continued, and the whole of the collections were at that time removed from the rooms occupied by them in the University to the Natural History Department of the New Museum of Science and Art. They are still, however, available for the educational purposes of the University, and are freely accessible to the Students attending the classes of Natural History and Geology.

A Zoological Museum is now being formed in the University. Graduates, former Students and others interested in the Natural History Department will greatly aid in this important undertaking by presenting specimens to the Keeper—the Professor of Natural History.

11. MATERIA MEDICA MUSEUM.—The Materia Medica Museum contains one of the most complete collections of medicinal and food substances in this country. The collection was founded by Professor Andrew Duncan. His successor, Sir Robert Christison, during his long incumbency of the Professorship, added a large number of valuable specimens, which were, for the most part, mounted by himself with singular neatness. The present occupant of the Chair has made further

extensive additions. The Museum has been greatly enriched by interesting donations to the Professor from former members of the Class in all parts of the world. Besides the general collection, there is a Students' Reading Museum, containing specimens of the medicinal substances usually employed in this country, which has been formed and arranged by the present Professor of Materia Medica.

12. SURGICAL MUSEUM.—This collection was formed by the late Professor Spence, and has been largely extended by the present Professor, to whom it now belongs. During the last five years many additions have been made, both of pathological preparations and of plaster and gelatine casts, illustrative of Surgical Anatomy and Pathology. A complete catalogue may, on application, be consulted by practitioners of medicine.

THE ROYAL BOTANIC GARDEN AND ARBORETUM.

The Royal Botanic Garden and Arboretum, Inverleith Row, is connected with the University, in so far as the Professor of Botany delivers his Lectures in the Lecture-hall in the Garden. The grounds extend to about 60 acres, and there is an extensive range of Greenhouses and Hothouses, with a large Palm-house. There is an arrangement of herbaceous plants according to the Natural System, and a series of medicinal plants, arranged after the same system.

The Garden is open daily. Facilities for studying the plants in the Garden are afforded to Students.

The Botanical Museum in the Garden is open daily to Students, and the University Herbarium, which is placed in the Garden, may also be consulted between the hours of 10 and 5, under the direction of the Professor or the Curator.

The Botanical Laboratory in the Garden is open daily for work and original research.

A Guide to the Garden, and a List of Medicinal and Poisonous Plants cultivated in the Garden, have been published. Both of these may be had at the Garden.

I.

FACULTY OF ARTS

(OR OF LITERATURE, SCIENCE AND PHILOSOPHY).

1890-91.

Dean.

PROFESSOR CAMPBELL FRASER,

D.C.L. (OXON.), LL.D. (GLASG.).,

Gorton House, Hawthornden, Edinburgh.

Programme of Classes.

SUMMER SESSION, 1890.

The Classes will be opened as follows, and will be closed on Friday, 18th July.

Classes.	Days and Hours.	Professors.	Class Fees.
Physical Laboratory.....	1 May, 10 o'cl.	Prof. Tait and Assistant.	£2 2
Sanskrit	1 May, 3 ,,	Prof. Eggeling,..	3 3
Engineering Field-Work (Surveying, Levelling, &c.)	17 June, 9.30 ,,	Prof. Armstrong,	3 3
Geology (*Mon., Wed., Fri.*)..... Field Demonstrations *on Saturdays.*	5 May, 4 ,,	Prof. Geikie, ...	3 3
History	13 May, 3 ,,	Prof. Kirkpatrick	3 3
Elementary Hebrew[1] ...	5 May, 10 ,,	Prof. Adams and Assistant.	1 11 6

TUTORIAL CLASSES.

These Classes commence on Thursday, 1st May, and close on Friday, 18th July.

Classes.	Hours.	Professors' Assistants.	Class Fees.
Senior Humanity.....	9–10	Francis R. Jamieson, M.A.	£2 2
Junior Humanity.....	10–11		
Third Humanity.....	11–12		
Junior Greek.....	9–10	John Alexander Smith, M.A. (Edin.), B.A. (Oxon.).	2 2
Senior Greek.....	10–11		
Third Greek.....	12–1		
Junior Mathematics.....	11–12	R. E. Allardice, M.A.	2 2
Senior Mathematics.....	12–1		
Advanced Mathematics.	10–11		
Natural Philosophy.....	11–12	William Peddie, D.Sc.	2 2
Analytical Dynamics....	9–10		
Logic & Psychology..... (*Mon., Wed., & Fri.*)...	1–2	R. P. Hardie, M.A. (Edin.), B.A. (Oxon.)	1 11 6
Moral Philosophy..... .. (*Mon., Wed., & Fri.*)...	12–1	W. G. Smith, M.A.	1 11 6
Rhetoric and English Literature	2–3	G. Gregory Smith, M.A. (Edin.), B.A. (Oxon.)	1 11 6

[1] To prepare Students for entering the Junior Class in Winter Session.

CLASSICS.—In the Senior Classes of Greek and Latin, Students are specially prepared for the M.A. Pass Examinations in Classical Literature to be held in October 1890 and April 1891. Most of the prescribed books will be read, and some Lectures will be given on the Literature. This Course may with advantage be taken by those who have attended the Junior Classes and are about to enter the Senior next Winter Session, and by those who have completed the attendance required for the classical part of their Degree, but intend to go up for examination in October instead of April next. The Junior Classes are intended to meet the wants both of the less advanced students who have already attended the Winter Classes, and of those who are preparing to enter on the regular Winter Course for the first time in October next. Part of the work prescribed for the M.A. Pass Examinations in October 1890 and April 1891 will be read, and easier composition will be done. Advanced Classes in Greek and Latin will be formed for the reading of the more difficult authors. These Classes are intended as a preparation for the Advanced Winter Courses. The authors read will be specially selected to suit those preparing for University Scholarship Examinations, and for Classical Honours.

MATHEMATICS.—In the Junior Class of Mathematics the Lectures will be confined to the subjects necessary for the Junior Winter Course, namely, Plane Geometry, and the simpler portions of the Elements of Algebra. The Lectures in the Senior Class, being designed for those who have already attended the Junior Winter Course, or who wish to revise the work of the Senior Winter Course, will embrace Trigonometry, Algebra, and Conic Sections. These Classes afford to Students an opportunity of preparing either for the M.A. Pass or 1st B.Sc. Examination in Mathematics. In the Advanced Class of Mathematics, which has been instituted for the benefit of those preparing to join the Advanced Winter Course, Lectures will be given on Determinants, Theory of Equations, Co-ordinate Geometry, and the Elements of the Differential and Integral Calculus.

NATURAL PHILOSOPHY.—The Course of Lectures on Natural Philosophy will include a treatment of the laws of Heat, Light, Electricity, &c., and of the Elementary Principles of Dynamics. It will be specially adapted to the wants of Students preparing for the 1st B.Sc. or Departmental M.A. Examination in Physics, and for the Natural Philosophy and Mechanics Preliminary Examinations in Medicine and Science. The Advanced Course is intended for Students who are preparing for the Advanced Winter Course, or for the 2nd Science Examinations.

LOGIC AND PSYCHOLOGY.—To prepare for the Class of Logic and Psychology next Session, and for the M.A. Pass and other Examinations. Elements of Logic (Fowler or Jevons). Introduction to Psychology (Professor's "Selections from Berkeley"). Professor's "Locke" (Philosophical Classics).

MORAL PHILOSOPHY.—To prepare for the Class of Moral Philosophy, and for the M.A. Pass and other Examinations. Professor's "Handbook"; Sidgwick's "History of Ethics."

RHETORIC AND ENGLISH LITERATURE.—Lectures on the History of English Literature and on the History of the English Language, with special attention to the subjects for the M.A. Examination. It is also proposed to form a Class for the study of Old English (Anglo-Saxon) and Middle English.

ADVANCED CLASSES will be conductedi f a sufficient number intimate their intention of joining.

WINTER SESSION, 1890-91.

The classes will be opened on Wednesday, 22nd October, and will meet daily (Saturdays excepted), unless otherwise stated. They will meet for the last time before the Christmas holidays on Friday, 19th December; will reassemble on Tuesday, 6th January 1891, *and will be closed on Thursday, 2nd April* 1891. *The Annual Graduation Ceremonial in Arts, &c., will be held on Friday, 17th April* 1891.

Classes.	Days of Opening and Hours of Attendance.	Professors.	Class Fees.
First Humanity ...	22 Oct., 12 & 20'cl.	Prof. Sellar...	£3 3
Second Humanity .	22 Oct., 10 ,,		3 3
First Greek	22 Oct., 9 & 1 ,,	Prof. Butcher....	3 3
Second Greek	22 Oct., 11 ,,		3 3
Third Greek..... ...	27 Oct., 2 ,,		2 2[1]
First Mathematics	22 Oct., 12 ,,	Prof. Chrystal...	3 3
Second Mathematics..	22 Oct., 10 ,,		3 3
Third Mathematics....	27 Oct., 9 ,,		3 3
Logic & Psychology...	22 Oct., 1 ,,	Prof. Campbell Fraser	3 3
Metaphysics and Hist. of Philos. (*Mon. and Thurs.*)	3 Nov., 3 ,,		2 2[2]
Moral Philosophy.....	22 Oct., 12 ,,	Prof. Calderwood	3 3
Do. Advanced... (*Tues. & Fri.*) ...	4 Nov., 3 ,,		2 2[2]
Natural Philosophy...	22 Oct., 11 ,,	Prof. Tait	3 3
Do. (Advanced Class)	3 Nov., 10 ,,		3 3
Physical Laboratory..	10 Nov., 10 ,,		2 2
Rhetoric & English Literature.....	22 Oct., 4 ,,	Prof. Masson.....	3 3
History [3]			
History and Const. of U.S.A. (*Mon.*, (*Wed. & Fri.*)	15 Oct., 3 ,,	Prof. Kirkpatrick	1 1[4]
Practical Astronomy .	28 Oct., 11 ,,	Prof. Copeland...	3 3
Agric. & Rural Econ.	22 Oct., 4 ,,	Prof. Wallace	4 4
Music.....	10 Nov., 3 ,,	Prof. Sir H. Oakeley	3 3
Sanskrit and Comparative Philology (Junior Class).....	3 Nov., 3 ,,	Prof. Eggeling	4 4
(Senior Class).....	,, 4 ,,		4 4
Engineering	4 Nov., 9 ,,	Prof. Armstrong	4 4
Do., Short Additional Course	12 Jan., 5 ,,		1 1[4, 5]
Geometrical & Mechanical Drawing	5 Nov., 10 to 2 ,,		3 3

[1] The fee is £3, 3s. for those who have not previously attended the Greek Classes qualifying for graduation.
[2] For those only who have previously attended the Junior Class.
[3] Given in Summer Session.
[4] Five shillings University entrance fee for non-matriculated Students.
[5] No fee for Students of the regular Class of Engineering.

WINTER SESSION, 1890-91—*continued.*

Classes.	Days of Opening and Hours of Attendance.	Professors.	Class Fees.
Geology & Mineralogy (*Mon., Wed., & Fri.*)	22 Oct., 4 o'cl.	Prof. Geikie	£4 4
Practical Class (*daily*)	24 Oct., 3 to 4 ,,		2 2
Com. and Pol. Econ., and Mercantile Law.	30 Oct., 5 ,,	Prof. Nicholson	3 3
Economics as applied to Agriculture (*Mon., Wed., & Fri. till Christmas*)	7 Nov., 3 ,,		1 1
Theory, Hist., & Art of Education	28 Oct., 3.10 ,,	Prof. Laurie	3 3
Fine Art (*Tu. & Th.*)	30 Oct., 5 ,,	Prof. Baldwin Brown	2 2[1]
Do. Classical Archæology (*Th.*)	30 Oct., 3 ,,		1 1[2]
Do. for Art Students (*Wed.*)	5 Nov.		1 1[2]
Celtic Lang. & Lit.	4 Nov., 4 ,,	Prof. Mackinnon	2 2[3]

LECTURERS.

1. *Gifford Lectureship on Natural Theology*—Rev. Professor Sir George G. Stokes, LL.D., &c.
   This Course of Lectures will be delivered during the Session 1890-91.
2. *Arthur J. Balfour Philosophical Lectures.*
   Mr Andrew Seth, Professor of Logic and Metaphysics, St Andrews, and Balfour Lecturer, will give the third course of Lectures in Session 1890-91, before Christmas. Subject, "The Present Position of Philosophy."

Forestry	22 Oct. 9 o'cl.	W. Somerville, B.Sc., D.Œcon.	3 3[2]

[1] For Students of the Royal Scottish Academy, £1, 1s.
[2] Five shillings University entrance fee for non-matriculated Students.
[3] For Lectures only, £1, 1s.

ASSISTANTS TO PROFESSORS.

Humanity	Francis R. Jamieson, M.A.	Natural Philosophy	William Peddie, D.Sc.
Greek	John Alex. Smith, M.A. (Edin.), B.A. (Oxon).	Do. (Mechanical)	Thomas Lindsay.
Mathematics	R. E. Allardice, M.A.	Rhet. and English Literature	Geo. Gregory Smith, M.A. (Edin.), B.A. (Oxon.).
Logic and Metaphysics	R. P. Hardie, M.A. (Edin.), B.A. (Oxon.).	Agriculture	J. William Wallace.
Moral Philosophy	W. G. Smith, M.A.	Engineering	A. C Elliott, D.Sc., C.E.
		Geology	Alexander Johnston.

The following means are afforded for Practical Instruction :—

I. Laboratories.

The Physical Laboratory, established with the view of affording Students a practical knowledge of the construction and use of physical apparatus, and the mode of conducting experimental inquiries, is open daily from 10 to 3, under the superintendence of Professor Tait.

Geological and Petrological Laboratory, for practical instruction in the study of Minerals, Rocks, and Fossils, and the methods of plotting and drawing geological maps and sections, is open daily from 3 to 4, under the superintendence of Professor Geikie.

Engineering Drawing Class Room, open daily during the Winter Session, from 10 A.M. to 2 P.M., for practical instruction in drawing and drawing-office routine.

The Engineering (Fulton) Laboratory, open on fixed days during the Winter Session, for the practical instruction of Students in the processes employed by the Engineer in the Experimental Determination of the Physical and Economical Constants of Materials, Machines, and Prime Movers, and in the Practical Applications of Electricity.

Practical Instruction in Office and Field-work daily, in connection with the Summer Course of Lectures on Surveying, Levelling, &c., from 11 A.M. to 4 P.M. each day.

The Agriculture Department in the Museum of Science and Art, is open daily to Students attending the Agriculture Class. Excursions to farms are made on Saturdays by Members of the Agriculture Class, and demonstrations are given from time to time in the Agriculture Laboratory.

The Royal Observatory is open to Students of Practical Astronomy on two evenings of the week, from 8 P.M.

II. Museums.

The Natural Philosophy Museum contains a large and very valuable collection of physical apparatus, chiefly of modern construction.

Museum of Music and Musical Instruments.—A very interesting and valuable collection of a historical character.

Geological Museum.—This collection is for class purposes. It exhibits the characters of minerals and rocks, and the typical fossils of the different geological systems.

Fine Art Museum.—A small collection of casts, photographs, and drawings, illustrating the main points in the history of classical art. The collection is housed in the dome above the portal of the University.

Examiners for Degrees in Arts.

The Professors of Humanity, Greek, Mathematics, Logic and Metaphysics, Moral Philosophy, Natural Philosophy, Rhetoric and English Literature, Chemistry, Botany, Zoology, Geology, and the following additional Examiners :—

George Macdonald, M.A. (Edin.), B.A. (Oxon.), *Examiner in Classical Literature.* Appd. 1888

William Harvey, B.A. (Cantab.), LL.B. (Edin.), *Examiner in Mathematics.* ,, 1888

Rev. Wm. L. Davidson, M.A., LL.D., *Examiner in Mental Philosophy.* ,, 1889

Examiners for Higher Degrees (Sc.D.).

The Professors of the Subjects.

Examiners for Schoolmaster's Diploma.

The Professor of Education and Maurice Paterson, B.A., LL.D.

Examiners for Literate in Arts.

The Professors of the Subjects, and the Additional Examiners for Degrees in Arts.

MATRICULATION FEES.

For the Academic Year, 1st October to 1st October,	£1	0	0
For the Summer Session only, 1st May to 1st October,	0	10	0
University entrance fee in lieu of Matriculation for each of certain additional Courses (see Class Lists),	0	5	0

UNIVERSITY LIBRARY.

Every Matriculated Student is entitled to have in his possession two volumes at one time ; and is entitled to retain any book for two weeks ; from the date of borrowing ; and, further, to re-borrow any book for successive periods of two weeks, unless an application for the same shall in the meantime have been made by another person entitled to the use of the Library.

The Library is open for the purpose of giving out Books to Students, either on loan or for reference, in the Hall appropriated for that purpose, every lawful day during the Winter Session, from Ten to Four o'clock, except on Saturdays, when it is closed at One o'clock. The Students' Reading Room is also open during the Winter Session on Mondays, Wednesdays, and Fridays, from Eight to Ten P.M.

The Students' Reading Library, in the University New Buildings, is open daily, from Nine A.M. to Five P.M., except on Saturdays, when it is closed at Twelve noon.

Every Student applying for Books must exhibit to the Librarian his Matriculation Ticket for the Session, with the Class Ticket of at least one Professor, and deposit £1, after which his name will be enrolled in the Library books.

Every Book taken out must be returned uninjured within a fortnight.

The Curriculum in Arts.[1]

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THE Ordinary Curriculum in the Faculty of Arts, with a view to a Degree, extends over FOUR WINTER SESSIONS, and comprehends attendance on all the Classes enumerated in No. I. of the *Regulations for Graduation in Arts* (see p. 109).

But, by No. II. of these *Regulations* (see p. 109), those who pass an Entrance Examination in Latin and Greek sufficiently well to satisfy the Faculty that they are qualified to be admitted to the Higher Classes of Latin and Greek, may, if they please, complete the Curriculum in Arts, with a view to Graduation, within THREE WINTER SESSIONS; also those who pass an Entrance Examination in Mathematics, may dispense with one of the Sessions of attendance at the Mathematical Classes.

Those who desire, in accordance with this Regulation, to be freed from a Session of attendance in the *Latin and Greek Classes*, in order that they may thus be enabled to complete the Curriculum in Arts, with a view to a Degree, within THREE Winter Sessions, must present themselves for the Examination in Latin and Greek at the commencement of the FIRST SESSION of their attendance in the Curriculum of Arts.

Those who, in accordance with the same Regulation, also desire exemption from a Session of attendance in *Mathematics*, must also present themselves for examination in Mathematics at the *commencement* of the FIRST SESSION of their attendance in the Curriculum of Arts.

For the subjects of these Examinations in Latin, Greek, and Mathematics, see under *Entrance Examination for Curriculum of Three Sessions*, pages 113 and 114.

[1] The annual amount payable for Matriculation, Class Fees, &c., of the regular Course in Arts may be estimated at about £10, 10s.

Order of Study in the Faculty of Arts.

It is particularly recommended by the Faculty—

1. That in a Curriculum of Four Sessions, the Junior Classes of Humanity, Greek, and Mathematics, or any two of them, be attended in the *First* Session.

   *** *Students who attend the Junior Mathematics, in their First Session, along with the Junior Humanity and the Junior Greek, may obtain a dispensation from attendance in the Junior Humanity from* 12 *to* 1 *o'clock.*

2. That Natural Philosophy be attended along with, or at any rate not before, one of the Mathematical Classes.
3. That in a Curriculum of Four Sessions, the Junior Class of Logic and Metaphysics be attended in the *Second* Session, or (alike in a Curriculum of Four and one of Three Sessions) at all events in a Session *preceding* that in which the Class of Moral Philosophy is attended.

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PROFESSORIAL COURSES OF LECTURES.

I. HUMANITY—(Latin).

PROFESSOR SELLAR.

Junior Class—12 to 1 and 2 to 3.

The work of the Class consists of—

1. Daily readings and explanations of parts of Virgil, Horace, Ovid, or Tibullus, Livy, Sallust, and Cicero;—

2. Lectures on Roman History or Literature, and occasional prelections on Terence or some other Latin poet;—

3. Exercises in Latin Prose Composition;—

4. Written Examinations.

Books required—Bradley's Arnold's Latin Prose. Merivale's General History of Rome; *or*, Merivale and Pullar's History; Ramsay's Elementary Roman Antiquities.

Senior Class—10 to 11.

The work of the Class consists of—

1. Readings and explanations of parts of Virgil, Horace, Cicero (*Letters*, or *Speeches*); Tacitus (*Annals*, or *Histories*);—

2. Lectures on Roman Literature and History, and Prelections on some Latin author;—such as Plautus, Catullus, Martial, or Juvenal;—

3. Exercises in Latin Prose, and voluntary Exercises in Latin Verse;—

4. Written Examinations.

Books recommended—Mommsen's History of Rome, abridged by Bryans and Hendry; Merivale's Fall of the Roman Republic; Cruttwell's History of Latin Literature; Bradley's Aids to Latin Prose.

Third Class[1]—2 to 3.

The Third Latin Class meets every alternate year. It is intended to assist the studies of Candidates for University Scholarships and Honours in Graduation.

The work of the Class consists of—

1. Readings and explanations of some of the more difficult Latin Authors, such as Tacitus, Lucretius, Plautus, Martial, &c.;—

2. Lectures on Roman History and Literature, chiefly in connexion with the Books read in the Class;—

3. Essays on questions arising out of the Lectures or Books read, and Exercises in Latin Prose Composition;—

4. Written Examinations on the work done in the Class, and on subjects prescribed for voluntary reading.

II. GREEK.

PROFESSOR BUTCHER.

Junior Class—9 to 10 and 1 to 2.

The work of the Class consists of—

1. Readings of some Greek author, as Xenophon, Lucian, Plato (an easy dialogue), Homer, Euripides, or Aristophanes (selections).

2. Lectures once a week on Greek Literature or History.

3. Exercises several times a week in Greek Prose Composition.

4. Written Examinations, partly on the work done in the Class, partly on work prescribed for private reading.

Books recommended—W. G. Rutherford's Greek Grammar; Elementary Greek Syntax, by F. E. Thompson; Clyde's Greek Syntax; Jebb's Primer of Greek Literature; Peile's Primer of Philology; Fyffe's Primer of Greek

[1] This Class does not meet in 1890-91.

History ; Cox's General History of Greece, or W. Smith's History of Greece.

Senior Class—11 to 12.

The work of the Class consists of—

1. Readings of some Greek author, such as Thucydides, Demosthenes, Herodotus, Plato ; Homer ; a play of Æschylus, Sophocles, Euripides, or Aristophanes.

2. Lectures once a week on Greek Literature, History, or Philosophy.

3. Greek Prose Composition, Translation of an Unseen Passage once a week, and a Lecture on the passage when the exercises are returned.

4. Written examinations partly on the work done in the Class, and partly on work prescribed for voluntary reading.

5. Greek Verse Composition (voluntary).

Books recommended.—W. G. Rutherford's Greek Grammar ; Goodwin's Greek Moods and Tenses ; Greek Syntax, by F. E. Thompson ; Sidgwick's Greek Prose Composition ; Jebb's Primer of Greek Literature ; Müller & Donaldson's History of Greek Literature ; Jevon's History of Greek Literature ; Cox's General History of Greece, or W. Smith's History of Greece ; Greek Verse Composition (Sidgwick and Morris) ; An Introduction to the Comparative Grammar of Greek and Latin, by King and Cookson.

Third Class[1]—2 to 3.

The Third Greek Class meets every alternate year. It is intended to assist the studies of Candidates for University Scholarships and Honours in Graduation.

The work of the Class consists of—

1. Readings and explanations of some of the more difficult Greek Authors, such as Thucydides, Demosthenes, Plato, Aristotle, Æschylus, Pindar, &c.

[1] The Third Greek Class will meet during the Session 1890-91.

2. Lectures once a week on Greek Literature, History, or Philosophy.

3. Greek Composition and Translation of Unseen Passages.

4. Occasional Critical Papers and Essays.

5. Written Examinations, partly on the work done in Class, and partly on work prescribed for voluntary reading.

III. MATHEMATICS.

PROFESSOR CHRYSTAL.

First Class—12 to 1.

Plane Geometry equivalent to Euclid, Books i., ii., iii., iv., and vi. (in the lectures the arrangement of the *Syllabus of Plane Geometry*, prepared by the Association for the Improvement of Geometrical Teaching, is followed more or less closely); Solid Geometry, equivalent to Euclid, Book xi.; Modern Geometry; and Elementary Algebra.

Second Class—10 to 11.

Algebra, including the elements of the Theory of Equations, and of Determinants, and the Theory of Limits; Plane Trigonometry; Conic Sections, treated geometrically and analytically; Modern Geometry.

Third Class—9 to 10.

The Third Class Course now extends over two years, being in alternate years more elementary and more advanced.

The subjects of the elementary course are the more elementary parts of the Differential and Integral Calculus, and of the Calculus of Finite Differences, and the Analytical Geometry of the Conic Sections. It is assumed that the Student has acquired a knowledge of the Theory of Equations, and of the elements of the Theory of Determinants before he joins the Class.

The subjects of the Advanced Course are the higher parts of the Differential and Integral Calculus; Differential Equations;

Definite Integrals with special reference to Fourier's Theorem; Functions of Laplace and Bessel; Higher Plane Curves; Analytical Geometry of Three Dimensions.

Additional lectures on Quaternions, Projective Geometry, and other special subjects are given occasionally.

The course of the Session 1890-91 will be advanced.

Tutorial Classes.—In addition to the ordinary class lectures in the First and Second Classes, occasional lectures are given by the Class Assistant. The attendance on these is voluntary, and the time is devoted to the repetition of parts of the class lectures and to the working of examples.

Home Exercises are prescribed weekly in all the classes.

Written Examinations on the class lectures are held monthly during the Session. The class honours are determined solely by these examinations.

Text-Books.—As a rule *special* text-books are not prescribed; but the student is recommended to select from the following list:—

Geometry.—Wilson's Elementary Geometry, or the Text Books of the Society for the Improvement of Geometrical Teaching, and one or more of the following, for the sake of the exercises they contain:—Mackay's, Todhunter's, Nixon's, or Casey's edition of Euclid's Elements, and Casey's Sequel to Euclid.* [1]

Algebra.—Chrystal, or Todhunter, Gross, Chambers's Mathematical Tables.

Solid Geometry and Conic Sections.—Wilson, Taylor (smaller work), or Taylor* (larger work).

Trigonometry.—Walmsley, Todhunter, or Lock (M'Lelland and Preston * for Spherical Trigonometry).

Analytical Geometry.—Smith's Analytical Conic Sections; and Dyer's Exercises in Analytical Geometry. Students

[1] Works marked with asterisks are recommended to those only who make Mathematics a specialty.

intending to take the Third Class are recommended to get Salmon's Conic Sections, Salmon's Higher Plane Curves,[1]* and Salmon's Geometry of Three Dimensions,* or, instead of the last, Smith's Solid Geometry.

Projective Geometry.—Cremona's Elements of Projective Geometry translated by Leudesdorf, or Henrici's Article on Geometry, Encyclopædia Britannica (9th edition).

Higher Algebra and Theory of Equations, etc.—Burnside and Panton's, or Todhunter's Theory of Equations; Thomson's Introduction to Determinants, and Muir* or Scott;* and Salmon's Higher Algebra for those who mean to read for Mathematical Honours.

Differential and Integral Calculus.—Williamson's Treatises; Forsyth's Differential Equations*; Frost's Curve Tracing;* Boole's Finite Differences.*

IV. LOGIC AND METAPHYSICS.

PROFESSOR CAMPBELL FRASER.

Logic and Psychology—Junior Class.

The Junior course, at *one* o'clock, comprehends :—

I. LOGIC—Introduction. Criteria of Consistency in Thought. Concepts—their extent, content, and formal relations : Propositions and their forms, with the rationale of Definitions and Divisions; Reasoning and its forms, with the rationale of Demonstration. Fallacies—their divisions, subdivisions, causes, and cure. Criteria of Inductive and Analogical Evidence—Scientific Proof: Evidence of Human Testimony and Authority, and Circumstantial Evidence—Historical Proof.

II. PSYCHOLOGY—Introduction. (A) General account of the constitution of Man in his Self-conscious Life and as an Organism. (B) Special Account of Human Intellect or Cognitive Power:—(*a.*) Phenomena presented in Sense and their Sense-perception;—(*b.*) Mental Representation of data of sense

[1] See note on p. 86.

under laws of Association or Habit;—(*c.*) Generalization and Inferential Thinking—inductive and deductive;—(*d.*) Intuitive Reason and Ultimate Truth.

Essays are proposed, and Written as well as Oral Examinations are held, in connection with the Lectures. The Professor's "Selections from Berkeley" is used for exercise in psychological analysis; Fowler's "Deductive" and "Inductive" Logic, for exercise in Logic.

Metaphysics—Advanced Class.

III. METAPHYSICS—This Class will meet on Mondays and Thursdays at *three* o'clock.

The Course is an Introduction to Metaphysics or Speculative Philosophy. It comprehends classification and discussion of some of the principal problems—epistemological, ontological, and teleological—which Metaphysics embraces, viewed in their relations to Science and Religion, and also in their Historical Development.

The subjects and books for Graduation with Honours are considered.

"Bruce of Grangehill and Falkland's Prize" is offered annually for competition in the Class. (*See* UNIVERSITY PRIZES.)

V. MORAL PHILOSOPHY.

PROFESSOR CALDERWOOD.

Ordinary Class.

The following are the subjects embraced in the Course of Moral Philosophy:—

INTRODUCTION.—Province and Aim of Moral Philosophy.

1. PSYCHOLOGY OF ETHICS.—Knowledge of Moral Distinctions; the Moral Faculty; Intuitional Theory; Evolution Theories, Biologic (Spencer), Utilitarian (Mill), and Dialectic (Hegel); Impulses to Action; Restraints upon Action; the Will—its Nature, Functions, and Freedom; Moral Sentiments Accompanying Moral Judgments; the Disorder of Moral Nature.

2. METAPHYSIC OF ETHICS.—The Being of God; His Attributes; His Moral Government; the Foundation of Virtue; the Relation of Divine Sovereignty to Free-Will; the Relation of Human Desire to Divine Sovereignty; the Origin of Evil; the Immortality of the Soul.

3. APPLIED ETHICS.—Man's Position in the World; Guidance of Man as an Individual; Laws Regulating the Development of our Nature and the Formation of Moral Character; Guidance of the Individual as a Member of Society; Inferential Maxims of Moral Life; Guidance of Society; Ethical Philosophy as bearing on Social Problems; Natural Religion.

4. THE HISTORY OF MORAL PHILOSOPHY.—The Rise of Philosophy; Distinction of Moral from Intellectual Philosophy; Development of Systems of Moral Philosophy in Ancient and Modern Times.

The Course includes lectures, oral and written examinations, and essays.

Text-Books.—The Professor's "Handbook of Moral Philosophy;" Kant's "Groundwork of the Metaphysic of Ethics;" Schwegler's "History of Philosophy."

Books recommended for reference.—Price's "Principal Questions in Morals," Butler's "Sermons on Human Nature," Reid's "Active Powers," Mill's "Utilitarianism," Herbert Spencer's "Data of Ethics," Wallace's "Logic of Hegel," Hegel's "Philosophy of the State," Green's "Prolegomena of Ethics," Sidgwick's "Methods of Ethics," Fleming's "Vocabulary of Philosophy," and a History of Philosophy, either Schwegler or Ueberweg.

Advanced Class.

This Class is intended chiefly for those who have gone through the ordinary course. Study is concentrated on the history of Moral Philosophy.

Subjects of study.—The Ethical System of Socrates as presented in Xenophon's "Memorabilia," and in Plato's "Protagoras" and "Apologia." The Moral System of Plato

as developed in the "Republic," and other Dialogues. Aristotle's "Nicom. Ethics." The rise of Modern Philosophy; the "Method and Meditations" of Des Cartes; Spinoza's "Ethics." The Scepticism of Hume, and the fresh start of Philosophy subsequently. Kant's Ethical System; Hegel's Ethics; the development of Utilitarianism.

Books recommended.—Zeller's "Socrates and the Socratic Schools," and "Stoics, Epicureans, and Sceptics;" Plato's "Republic," Jowett's Translation, Sir Alexander Grant's "Ethics of Aristotle," Kant's "Practical Reason," Abbott's "Kant's Theory of Ethics," Hegel's Ethics in Morris's "Hegel's Philosophy of the State and of History," Grigg's Philosophical Classics, Green's "Prolegomena to Ethics"; Utilitarianism, as presented in Mill's "Utilitarianism," Spencer's "Data of Ethics," and in Sidgwick's "Methods of Ethics."

VI. NATURAL PHILOSOPHY.

PROFESSOR TAIT.

ORDINARY CLASS.

The subjects embraced in the Course of Natural Philosophy are the following:—

1. Properties of Matter—including Inertia, Gravitation, Molecular Forces, &c.
2. Abstract Dynamics—including Kinematics, Statics and Kinetics of Solid, Liquid, and Gaseous Bodies, with their applications.
3. Sound, and Wave-propagation in general.
4. Heat, with its application to the Steam-Engine, &c.
5. Light (Geometrical and Physical Optics).
6. Electricity, including Frictional and Voltaic Electricity, Thermo- and Magneto-Electricity, Electro-Dynamics, and Magnetism, with their practical applications to the Telegraph, &c.
7. Conservation of Energy.
8. Plane and Physical Astronomy.
9. Meteorology.

Properties of Matter, Abstract Dynamics, and Conservation of Energy, together with two or three others of the above divisions of the subject, are treated in detail every Session, the remainder being necessarily discussed in a more superficial manner, as it is impossible to enter at length into all in the course of a single Session.

It is intended that in Session 1890-91, in addition to Sections 1, 2, and 7, Sections 5 and 6 shall form the more detailed part of the Course.

The whole Class is examined at short intervals during the Session upon the subjects already treated in the Lectures; and a prize is given for the best answering. In these examinations no Mathematics are requisite, except the most elementary portions of Arithmetic, Algebra, and Geometry.

In the months of January and March there are special Examinations upon prescribed subjects; and, on these two occasions only, the Class is divided into two parts—the division depending mainly upon the students' proficiency in Mathematics. In the Lower Division, the elements of Algebra and Geometry alone are required; in the Higher Division, Algebra, Geometry, and the Geometry of the Conic Sections are necessary.

The Prizes in each division of the Class are determined by adding the marks obtained in the two sets of Examinations above described. No Student who has obtained a Prize in either Division of the Class can be allowed to compete, in a subsequent Session, for a Prize in the same or in a lower Division.

The Text-Book for the Dynamical part of the Course will be Thomson and Tait's "Elements of Natural Philosophy" (Pitt Press, Cambridge). For the remainder of the subject the student may consult some of the following books:—Clerk-Maxwell's "Matter and Motion," Jenkin's "Electricity," Balfour Stewart's "Lessons in Physics," Tait's "Properties of Matter," "Heat," and "Light."

The special Examinations in January 1891 will be on the following subjects:

Higher Division.

Newton's "Three Sections" (Goodwin's "Course of Mathematics," Frost's "Newton," or any good edition of the *Principia*).

Lower Division.

Herschel's "Astronomy," in Lardner's Cyclopædia, omitting the chapter on Perturbations. A series of explanatory lectures will be given by the Class-Assistant before this Examination.

The subjects for the March Examinations in both Divisions will be Kinematics and Dynamics. The range will depend upon the progress which the Class has made in these subjects.

Subject of Voluntary Essay to be given in before the end of March 1891—"How the chief fundamental principles of Physics can be expressed without the aid of the idea properly denoted by the term *Force*."

ADVANCED CLASS.

For the benefit of Engineering Students, and of Arts Students wishing to Graduate with Honours in the Department of Mathematics, Professor Tait has opened an Advanced Class. Three lectures are given per week, and the subjects are—

Dynamics (generally),
Theory of Heat,
Physical Optics,
Theory of Electricity,

all treated with regard to their practical applications.

The text-book for the first of these subjects is the article *Mechanics*, in the last edition of the *Encyc. Brit.*

PHYSICAL LABORATORY.

This has been established with the view of affording Students a practical knowledge of the construction of, and manner of using physical apparatus, and with the mode of conducting experimental inquiries. The Laboratory is open for five or six hours daily during the Winter and Summer Sessions, under the personal superintendence of the Professor and his Class-Assistant.

Fee, £6, 6s. for the Winter Session. It is hoped that, with the valuable collection of apparatus in the Museum, results of real use to science may be obtained.

A practical class, for the instruction of beginners in the elementary processes of measuring Time, Mass, Length, Angle, Force, &c., will be formed in the Winter and also in the Summer Sessions. The course, in each case, will extend over about three months. The fee is £2, 2s. The Professor reserves to himself the right of admitting *free*, to general Laboratory work, such matriculated students of the practical class as may show special diligence and aptitude.

VII. RHETORIC AND ENGLISH LITERATURE.

PROFESSOR MASSON.

The business of the Class will comprehend :—

I. Till about Christmas, two parallel courses of Lectures : one on the Principles of English Style and Composition, with the relative portions of the Ancient Rhetoric ; the other on the Literary History of the British Islands as far as to 1250, with special attention to the Anglo-Saxon Literature, and with a view of the History of the English Language from its Anglo-Saxon stage to the beginnings of the present English.

II. From about Christmas to the end of the Session, a Course of Lectures on the History of English and Scottish Literature from 1250 to the present time : divided into Periods thus :— (1.) From 1250 to 1400, ending with Chaucer, Langland, and Barbour; (2.) From 1400 to 1580, including the English Poets rom Lydgate to Wyatt, Surrey, and Sackville, and the Scottish Poets from James I. to Dunbar, Gavin Douglas, and Lyndsay ; (3.) From 1580 to 1625, called "The Elizabethan Period," and including Spenser, Bacon, Shakespeare, and their Contemporaries; (4.) From 1625 to 1688, or the Period of Milton and Dryden ; (5.) From 1688 to 1789, or from Dryden to Cowper and Burns, called generally "The Eighteenth Century"; (6.) From 1789 to the present time, or from Wordsworth and Scott to Tennyson and Browning. Under each period there will be

a synopsis of its principal poets and prose-authors; the lives and writings of the more important of these will be reviewed more at large; and the general aim will be to exhibit the successive movements and variations of our Language and Literature in their connexions with the course of our National and Social History.

III. Instruction in English Composition, &c. During part of the Session one of the meetings in each week will be devoted to practical work of various kinds, including readings by the Students and brief written exercises to be done by them in the Class-room. Subjects will also be prescribed for more extensive Essays to be written at home. There will be Prizes for merit in Essay-writing, in addition to the general Class-Prizes.

Text Books and Books recommended.—Bain's "English Composition and Rhetoric"; Hodgson's "Errors in the Use of English"; Morley's "First Sketch of English Literature"; Chambers's "Cyclopædia of English Literature"; "Three Centuries of English Poetry"; Morris's "Historical Outlines of English Accidence"; Sweet's "Anglo-Saxon Reader."

VIII. HISTORY.

(See also under Faculty of Law.)

A Course of Twenty Lectures on the History and Constitution of the United States of America will be given on Mondays, Wednesdays, and Fridays, at 5 o'clock, beginning 15th October, provided a sufficient number of Students present themselves.

IX. PRACTICAL ASTRONOMY.

PROFESSOR COPELAND.

Lectures on Practical Astronomy, preceded by a general introduction, will be delivered on Tuesdays and Thursdays. Supplementary to these the Professor will afford instruction *gratis* to any members of the class in the use of portable and fixed astronomical instruments, at the Royal Observatory on

Calton Hill, beginning at 8 P.M. on the same days of the week. In the practical lessons the requirements of the scientfic traveller will be kept specially in view. In the course of the lectures the most desirable text-books will be indicated.

X. AGRICULTURE AND RURAL ECONOMY.[1]

PROFESSOR WALLACE.

Scientific Practice.

1. *Definition of Agriculture.*—Aid given by the Allied Sciences.

2. *Surface Geology.*—Formation and Classification of Soils—their Physical and Chemical Properties. Importance of Organic Nitrogen. Indications of good or bad Soils—the different Methods of Management and Improvement.

3. *Drainage.*—Its Practice and Advantages—Irrigation—Wet-Warping—Mixing or Top-Dressing—Claying—Marling—Chalking—Liming—Paring and Burning—Clay-Burning. The Effect on Soils of Cultivation and the Growth of Plants.

4. *Implements and Machines of the Farm.*—The Importance of their proper Construction and careful Management.

5. *Steam Cultivation.*—Its Advantages and Disadvantages.

6. *The Motive Powers Employed on the Farm.*—1st, Man; 2d, Horse; 3d, The Mechanical Powers (Water, Wind, and Steam)—their Comparative Values and Advantages.

7. *Farm Servants.*—Their Labour and Wages—Day-work and Piece-work. Detailed and total costs of Horse and Hand Labour on different Classes of Farms.

8. *The Importance of Rotations.*—Different Rotations and reasons why they are adopted—Systems of Farming.

9. *Our Farm Crops* (including Grain, Root, Forage, and Hay Crops).—Their Selection and Cultivation. Insect Injuries and Diseases, and the best Means of Prevention.

10. *Identification of Grasses and other Valuable Pasture*

[1] Candidates for the Diploma of the "Surveyors' Institute," 12 Great George Street, Westminster, S.W., are exempted from examination in Agriculture and Land Drainage, on presenting a certificate of proficiency (66 per cent. of marks) obtained in the class examinations of this course.

Plants.—Character and Habits of those of importance—Detection of Adulterations of Seeds—Regulations necessary to protect the Farmer in buying Seeds.

11. *The Management of Permanent Pasture.*—Proper Methods of making new Pasture—its After-treatment.

12. *Weeds in Pastures* and Means of Destroying them.

13. *Silage and the System of Ensilage.*—Its Advantages, &c. —Its Suitability and Unsuitability according to Locality.

14. *Manures.*—Farm-yard Manure—its proper Mixing, Storing, and Application—its great advantage as a General Manure. Special Manures and so-called Artificials—their Uses, Abuses, and Adulterations—the proper Times and Methods of their Application. The Value of Liquid Manure and Town Sewage, and how to utilise them.

15. *Buildings and Fences.* — The proper Construction of Fences—the General Arrangement of Farm-Buildings—the best Flooring and Inside Plans and Dimensions of Byres, Cattle-Sheds, Stables, &c. — Covered Yards — Ventilation—Drainage.

16. *Live-Stock, embracing Cattle, Pigs, Horses, Sheep, Poultry.*—The Various Breeds of each, and suitability of some to Local Conditions—"The Principles of Breeding." Feeding and Management—Cost of Feeding—Proper Mixtures of Food to Use. Cost of the Production of a Stone of Beef, Mutton, and Pork, showing the Amount of Profit in each case.

17. *Dairying in all its Branches*, including the suitability or otherwise of surrounding Conditions—the proper Classes of Dairy Stock to keep, and their Management—the Treatment of Milk, and its Sale, or its Manufacture into Cheese, Butter, &c.

18. *Feeding Stuffs.*—Suitability of the Common Food Substances to the different Classes of Farm Stock—the Purchase, Storing, and Administration of the same—their Manurial Residues. The lectures dealing with Live Stock are divided into two parts, and each part is given every alternate year.

Text-Books.—Wallace's "Farm Live Stock of Great Britain," M'Connell's "Note-Book of Agricultural Facts and Figures," J. B. Harris's "Cheese and Butter Making,"

Fream's "Rothamsted Experiments," "Wrightson's Principles of Agricultural Practice," and M'Alpine's "How to know Grasses by the Leaves."

Students are requested to consult with the Professor of Agriculture at the beginning of the Session as to the plan and arrangement of their work.

In connection with the Class there are, in addition to the Medal and First and Second Class Certificates, the Steven Scholarship of about £75 and the Vans Dunlop Scholarship of £100. Particulars will be found under *Scholarships* in the Faculty of Arts. The Highland and Agricultural Society of Scotland gives £10 to be spent on Books for Class Prizes. The Highland Society also offers five £20 Bursaries to Scotch students who pass a certain standard in a general education examination held usually in the end of October. Particulars may be learned from the Secretary, Highland and Agricultural Society, 3 George IV. Bridge.

Periodical Excursions will be made to some of the best Farms in the Lothians. A Medal is given to the student who writes the best report of the same.

Collateral Course in Economics.

Professor Nicholson will deliver about twenty lectures on *Economics bearing on the Study of Agriculture:*—1. The Food Supply of the United Kingdom; 2. The Wages of Agricultural Labour; 3. The Profits of the Farmer; 4. The Rents of Land and Causes of Variations in Rents; 5. Contracts for the Hire of Land; 6. The Risks of Long Leases; 7. Compensation for Improvements; 8. Fixity of Tenure and its Effects; 9. The Prices of Agricultural Produce; 10. Foreign Competition; 11. Effects of the Appreciation of Gold and the Depreciation of Silver; 12. Effects of various Imperial and Local Taxes on Agriculture. On Mondays, Wednesdays, and Fridays (till Christmas) beginning Monday, 28th October, at 3 P.M. (Fee one guinea.)

See also details of the Course in Forestry, by Dr Somerville, suitable for Agriculture Students.

XI. MUSIC.

PROFESSOR SIR HERBERT OAKELEY.

A scheme for the institution of a Faculty or Department of Music, and of a Curriculum and Graduation, has been approved by the Senatus, but has not received the sanction of the University Court or the Universities Commission. The following course can therefore only be conditionally indicated :—

1. Theoretical. Lectures on one or more of the following subjects :—

On Harmony, and (provided that a sufficient number of Students join the Class) on Counterpoint ; or on the History and Development of the Art and Science ; various schools and styles of Music ; History and construction of some of the principal Musical Instruments ; or on the works of the great masters.

2. Practical. Separate and Individual instruction in Organ or Pianoforte playing may be given to Students within a certain age ; but arrangements must depend on the number joining this Class. Both Classes are required to study Harmony.

Organ Performances from time to time during the Session.

A Choral Class may be formed.

XII. SANSKRIT AND COMPARATIVE PHILOLOGY.

PROFESSOR EGGELING.

A.—Sanskrit Language and Literature.

1. *Junior Class.*—Grammar and Exercises. Easy Sanskrit Texts such as the Hitopadeśa and selections from the Epic Poems. Easy translations from English into Sanskrit.

2. *Senior Class.*—Repetition of Grammar. Translations from English into Sanskrit. Sanskrit Texts such as Kālidāsa's Raghuvaṅśa or Sakuntalā ; Mrichchhakatikā ; Manu's Institutes of Law ; selected Hymns of the Rigveda.

The Course will also include a general view of the history of Sanskrit Literature.

B.—Comparative Philology.

A course of lectures will be delivered on the principles of Indo-European Comparative Philology, and the history of Linguistic Studies: provided that a sufficient number of Students or Matriculated persons be willing to attend.

XIII. ENGINEERING.

PROFESSOR ARMSTRONG.

Winter Session.

I. Class of Engineering.—The Object of the Course will be to show the practical application of Science to some branches of Engineering. The Series of Lectures will form a Two Years Course, so arranged that Students can enter the Class at the beginning of either year. The following are the subdivisions of the subject matter of the complete Course, a part only of each subdivision being dealt with each year :—

1. Applied Mechanics; 2. One Branch of Civil Engineering; 3. One Branch of Mechanical Engineering; 4. A Series of Examples of the Application of Machinery to Manufacturing Purposes.

Synopsis of the Lectures for the present Session :—

1. Principles of Statics; couples; moments of forces; parallel and inclined forces; centre of gravity; moment of inertia; friction.

2. Equilibrium and stability of frames, ribs, and linear arches.

3. Strength of materials: stretching, crushing, bending, and twisting.

4. Application of mechanical principles to combined structures, especially to roofs and bridges.

5. Earthwork and masonry; retaining walls and masonry arches.

6. Principles of Kinetics. Newton's laws of motion. Conservation and transformation of energy.

7. Application of principles of Kinetics to prime movers; especially to the steam engine.

8. Theory of heat engines.

11. Elements of mechanical design.

Four Examinations are held during the Session; and each week, unless there be an Examination, exercises are given to be worked at home. The questions set are such as are met with in the practice of Engineering; and the papers being returned to the Students, annotated and corrected, form a body of Examples for subsequent reference.

Engineering Works and Factories will be visited by the Class, under the guidance of the Professor.

II. CLASS OF GEOMETRICAL, MECHANICAL, AND ARCHITECTURAL DRAWING.—Students can attend this Class at any time between the hours of 10 A.M. and 2 P.M. each day. Work will be examined and instructions given by the Professor at 10 A.M. At other times the Class will be in charge of an Assistant.

All Students are recommended to take the Classes in Engineering and Drawing together.

The Class in Drawing may also be attended with advantage by those who propose in subsequent years to attend the Class in Engineering, as it is of great importance that Students should be able to readily understand mechanical diagrams, and to apply the graphic methods of calculation frequently employed by Engineers.

Instruction is given in the elements of Geometrical Drawing, the making of figured sketches from actual measurements, and subsequently in the Design and preparation of Working Drawings of Structures and Machines.

III. ADDITIONAL COURSES.—Short courses of lectures on special subjects, treated in detail, will be given from time to time.

During the present Session there will be a course of about twenty lectures, the subject of which will be duly announced.

IV. TUTORIAL CLASS.—A Tutorial Class, at which the questions proposed in the Weekly Exercises are discussed and explained, is held each week.

There is no extra Fee required for either of the foregoing (III. and IV.) from Students attending the Ordinary Class in Engineering (I.).

V. THE FULTON MECHANICAL LABORATORY.—A Laboratory for the practical instruction of Students in the processes employed by the Engineer in the experimental determination of the physical and economical constants of materials, machines, and prime movers, and in the practical application of electricity, will be opened during the present session. The courses of instruction will be duly announced.

Summer Session.

V. ENGINEERING FIELD-WORK.—A course of Practical Instruction in Surveying, Levelling, Setting Out, and Calculation of Quantities, is given during the Summer Session.

The course consists of lectures, and of practical work, as undertaken in the field and in the office, and occupies the whole of each day for about three weeks. The number of hours during which instruction is given is thus made to correspond to an ordinary course extending over a much longer period.

Course of Study.

The following course of study is recommended :—

1*st Year.*—Mathematics (1st Class), Geometrical Drawing, Chemistry, Engineering Field-Work, Geology (Summer Session).

2*d Year.*—Mathematics (2d Class), Natural Philosophy, Engineering, Mechanical Drawing.

3*d Year.*—Natural Philosophy (Advanced Class), Engineering and Drawing.

If the Student is sufficiently well prepared, some modification of the foregoing may be found desirable.

For particulars of Scholarships, &c., tenable in connection with the Department of Engineering, see SCHOLARSHIPS, (Arts, &c.).

A detailed Syllabus of Lectures and Courses of Instruction in the Department of Engineering is issued annually, and may be had on application.

XIV. GEOLOGY AND MINERALOGY.

PROFESSOR JAMES GEIKIE.

Winter Course.

I. CLASS OF GEOLOGY AND MINERALOGY.—This Class meets on Monday, Wednesday, and Friday, at 4 o'clock. The Course embraces a system of instruction in the following subjects :—

1. *The History of Geology*—an outline of the growth of the science from the time of the early cosmogonies downwards.

2. *Dynamical Geology*—a discussion of the nature and causes of geological changes effected on the surface and within the interior of the earth.

3. *Mineralogy*—an account of the physical and chemical characters of minerals, and a description of some of the more mportant and typical species in the various mineral groups.

4. *Petrology*—a description of the various families of rocks.

5. *Structural Geology*—a description of the geological structure and relations of rock-masses to each other.

6. *Palæontological Geology*—an account of the nature and use of fossils in geological inquiry.

7. *Historical Geology*—the history of the successive geological periods.

8. *Physiographical Geology*—an inquiry into the origin of the present outlines of the earth's surface.

9. *Speculative Geology*—an inquiry into the present physical conditions of the crust and interior of the earth; the origin of the greater physical features of the earth's surface; and the causes which have induced changes of climate.

The applications of Geology to Engineering, Agriculture, Mining, and other practical pursuits are described and illustrated.

Text-Books—"Outlines of Geology," by the Professor (*Stanford*); Rutley's "Mineralogy" (*Murby's Science Class-books*); or Dana's "Manual of Mineralogy and Lithology." More detailed works of reference, most of which are in the College Reading-Room, are recommended for each branch of the lectures.

II. CLASS OF PRACTICAL MINERALOGY AND GEOLOGY.—

This Class meets for one hour daily (3 to 4), except on Saturdays, under the superintendence of Professor Geikie. The course of instruction is as follows :—

1. *Blowpipe Analysis of Minerals.*
2. *Macroscopic and Microscopic Examination of Minerals and Rocks.*
3. *Palæontology.*
4. *Construction of Geological Maps and Sections.*

Text-Books.—Various works of reference, most of which will be found in the College Reading-Room, are recommended.

This Class may be attended by Students who are not following the Course of Lectures on Geology and Mineralogy.

III. Field Demonstrations.—Short excursions are made on Saturdays to places of geological interest in the neighbourhood of Edinburgh, when the Class Lectures are illustrated by demonstrations in the field, and practical instruction is given in Geological Surveying. At the close of the Session (usually in the last week of April) an excursion, extending over a week or thereabout, is made for the purpose of examining the structure of a more distant district.

These Field Demonstrations are open to Students attending either the Class Lectures or the Practical Class.

Adjoining the Geology Class-room there is a small museum exhibiting the characters of minerals and rocks, and the typical fossils of the different geological systems.

Summer Course.

The following subjects are dealt with in this Course :—

1. *Petrology.*—(The lectures are illustrated by demonstrations in the Laboratory and the Class Museum.)

2. *Palæontological Geology.*—(A collection of the typical fossils of the different formations occurring in Britain will be found in the Class Museum.)

3. *Structural Geology.*—Under this head *Dynamical Geology* is discussed in more or less detail.

4. *Geological Surveying.*
5. *Economic Geology.*
6. *Physiographical Geology.*

Structural Geology and *Geological Surveying* form the principal portion of this Course, but no previous knowledge of Geology is required on the part of the student—the elementary principles upon which the science is based being set forth both in the lecture-room and the field. The Class meets on Mondays, Wednesdays, and Fridays at 4 o'clock, and a short series of practical lessons on the study of rocks will be given at the commencement of the Session on Tuesdays and Thursdays at the same hour. The Saturdays are devoted to field demonstrations, when the mode of geological mapping and section-drawing is explained and illustrated.

XV. COMMERCIAL AND POLITICAL ECONOMY AND MERCANTILE LAW.

(See also under Faculty of Law.)

XVI. THEORY, ART, AND HISTORY OF EDUCATION.

PROFESSOR S. S. LAURIE.

Theory, or Science, of Education.

The End of Education generally. The relation of the School to this end.

Materials of Instruction conducive to the attainment of the end. Relative value of subjects. Distinction of Real and Formal. Physiology and its Educational Lessons.

Science of Education—I. The Psychology of Intelligence in its educational relations fully treated. Periods of Growth. The Rules of the Art which the Science yields.

Rules of the Art or Method.—Exposition showing their derivation from the Science. Application of the Rules to teaching of—

(1.) Real Naturalistic subjects, *e.g.* Object-lessons, Science, Geography.

(2.) Real Humanistic subjects, *e.g.* Language, Literature, Economics, History, &c.

(3.) Formal subjects, *e.g.* Arithmetic, Geometry, Grammar.

II. Moral Psychology. Rules of the Art of Moral Training and Discipline. Motives—The Authority of the Teacher, its Conditions. Punishments, and Rewards, &c., &c.

The Organisation of a School. Organisation of a State-system. The Manual and the Technical in Instruction. School-appliances.

History of Education and of Theories.

Only select portions of this course can be dealt with in any one Session.

1. Education in China. 2. Education of the Hindu Races. 3. The Education of the Ancient Persians. 4. Education among the Egyptians and the Semitic Races. 5. Education among the Hellenic Races. The educational views of Plato and Aristotle. 6. Education among the Romans. 7. Detailed analysis and exposition of the Institutions of Quintilian. 8. Plutarch. 9. Survey of the History of Education from Constantine to the Revival of Letters. 10. Erasmus, Colet, Luther, Melancthon, and John Sturm. 11. Roger Ascham: Exposition of "The Scholemaster." 12. Lord Bacon. 13. Ratichius. 14. Comenius. *Realism and Utility as opposed to Humanism and Culture.* 15. Milton's Educational views. 16. Analysis and exposition of John Locke's "Thoughts on Education," and the "Conduct of the Human Understanding." 17. Rousseau, Basedow, and Campe. 18. Dr Andrew Bell and Joseph Lancaster. 19. Analysis and exposition of Pestalozzi. 20. Jacotot. 21. Fröbel. 22. Jean Paul Richter. 23. Diesterweg. 24. Dr Arnold. 25. Herbert Spencer and contemporary Realism.

N.B.—*Three written Examinations will be held during the Session, and Three Essays on educational method called for.*

PRACTICE IN TEACHING.—Arrangements are made for securing *Practice in Teaching* to the extent of the Government requirements. Fee for this, £1, 1s. Facilities are also given for visiting one or two of the principal schools, and acquiring a knowledge of their organization.

Books necessary.—The Professor's "Handbook to Lectures." "Comenius' Life and Educational Writings," by the Professor. *Books recommended:* Professor's Book on Primary Instruction, and Herbert Spencer on Education. John Locke's Thoughts on Education, and the Conduct of the Understanding. Language and Linguistic Method in the School, by Professor Laurie.

XVII. FINE ART.

PROFESSOR BALDWIN BROWN.

I. A Course of forty lectures on *The Natural History of Art*, dealing with the general subject of the Fine Arts in their origin, history, and relation to human life as a whole, will be delivered on Tuesdays and Thursdays, at 5 P.M. The Cousin Prize, £15, will be awarded for the best set of eight Essays on subjects treated of in the Lectures of the Session.

II. A Course of twenty lectures on *Classical Archæology* will be delivered on Thursdays, at 3 P.M., provided that at least six Students desire to join the Class. The lectures will be designed to offer a general introduction to the subject in its various branches.

III. A Course of twenty lectures for Art Students, on Wednesdays at 5 P.M.

XVIII. CELTIC LANGUAGES AND LITERATURE.

PROFESSOR MACKINNON.

The class meets on five days in the week at 4 P.M. For Session 1890-91 the work of the class will be arranged as follows :—

1. Monday and Wednesday, Lectures on the Celtic Languages, Literature, and History.
2. Tuesday and Thursday, Reading and Exposition of Gaelic Poets and Prose Authors.

3. Friday, Reading of Old Gaelic and Manuscripts.

The Course of Lectures for 1890-91, which may be attended separately, will consist of two parts:—(1.) Celtic Philology. (2.) Lectures on the Literature of the Scottish Highlands. The Lectures will treat mainly of the printed Literature.

The Readings on Tuesdays will be selected from the first Part, and on Thursdays from the second Part, of the Class Reading-Book.

On Fridays the Advanced Section of the Class will read old Gaelic and Manuscripts.

The books recommended are—

1. In connection with the Lectures:—Zeuss's "Grammatica Celtica"; Curtius's "Greek Etymology"; Schleicher's "Comparative Grammar"; Brugmann's "Elements of the Comparative Grammar of the Indo-Germanic Languages"; Rhys's "Lectures on Welsh Philology."
2. For the Reading Class:—(*a*) Junior Division—Class Reading-Book (Part First); Gaelic Grammar and Exercises (Stewart's Grammar); (*b*) Senior Division—Class Reading-Book (Part Second); Stewart's Gaelic Grammar; O'Donovan's Irish Grammar; Windisch's "Kurzgefasste Irische Grammatik."

Several prizes will be offered for competition to Students of the Class.

A special prize will be given for the best Essay on the Influence of the Norse occupation on the Language and Literature of the Scottish Highlands. The Essay to be given in by December 31st, 1890.

LECTURESHIPS.

BALFOUR LECTURES IN PHILOSOPHY.

LECTURER—ANDREW SETH, M.A. (Professor of Logic and Metaphysics in the University of St Andrews).

These lectures are endowed by the Right Hon. Arthur J. Balfour of Whittinghame, M.P.

The first course of six lectures was delivered by Mr Seth in the last fortnight of the Winter Session 1884-85, the subject being "Scottish Philosophy, or the Scotch and German answers to Hume compared." The subject of the second course, given at the close of the Session 1886-87, was "Hegelianism and Personality." The third and concluding course will be given in 1890-91 before Christmas. Subject, "The Present Position of Philosophy."

GIFFORD LECTURES ON NATURAL THEOLOGY.

LECTURER—

These Lectures were endowed by the late Adam Gifford, Senator of the College of Justice, "for promoting, advancing, teaching, and diffusing the study of Natural Theology, in the widest sense of that term."

The Course will be delivered during the Session 1890-91.

FORESTRY.

LECTURER—W. SOMERVILLE, B.Sc., D.Œc.

Class meets daily from 9 to 10. The following subjects will be treated in detail.

1. *Forest Botany.*—Characters of trees. Structure, properties, and identification of British timbers. Laws of growth.

2. *Sylviculture.*—Habit of trees and their behaviour towards light, heat, moisture, climate, injuries, &c. The more important sylvicultural systems. Treatment of woods as regards establishing, thinning, and regenerating.

3. *Forest Pathology.*—Diseases due to fungi, soil, and atmospheric influences: their prevention and remedy.

4. *Forest Zoology.*—Mammals, birds, and insects, injurious to trees, and the means of preventing their attacks.

5. *Forest Utilization.* — Felling and transport of timber. Secondary forest produce.

6. *Forest Mensuration and Valuation.* — Measurement of felled and growing timber. Means of ascertaining annual, current, and periodic increments in trees and woods, as regards height, mass, section, diameter, quality, and value.

Graduation in Arts.

REGULATIONS OF THE UNIVERSITY OF EDINBURGH RELATIVE TO THE DEGREE OF MASTER OF ARTS (M.A.)

(*Applicable to all who have entered their Academical Course since* 31*st October* 1861.)

The Degree of Master of Arts admits to the General Council of the University, to professional Study for the Learned Professions, to the Army, &c. Under recent regulations, framed in virtue of the Education Act (1872), *the Degree qualifies for Masterships of Public Schools, subject to an examination in the methods of instruction, and three months' attendance in a Public School for the practice of teaching.*

I. The ordinary Course of Study necessary for the Degree of Master of Arts (except in the circumstances mentioned in the following Article) extends over FOUR WINTER SESSIONS, and includes attendance for *not less than two Sessions* on the Classes of Humanity (Latin), Greek, and Mathematics respectively; attendance for not less than one Session on the Classes of Logic and Metaphysics, Moral Philosophy, and Natural Philosophy respectively; and also attendance on the Class of Rhetoric and English Literature.

II. Any Student who, at the time of his Entrance to the University shall satisfy the Professors of the Faculty of Arts, on Examination, that he is qualified to attend the Higher Classes of Latin, Greek, or Mathematics, or any one of them, may be admitted to such Higher Class or Classes without having previously attended the Junior Class or Classes in the same department. When a Student has been thus considered by the Faculty of Arts to be qualified for admission to the Higher Classes both of LATIN and GREEK, without having previously attended the First or Junior Latin and Greek Classes, his Course of Study for the Degree of Master of Arts may be completed within THREE WINTER SESSIONS, instead of Four. And no Student who is thus qualified for admission to the Higher Class of LATIN and GREEK, or of MATHEMATICS, without having previously attended the First or Junior Class in the same department, is required to give attendance in Latin, Greek, or Mathematics respectively, for more than *one* Session, as a necessary part of the Course of Study for the Degree of Master of Arts.

III. In pursuing the Course of Study for the Degree of Master of Arts, no Student is permitted to pass from the Junior to the

Higher Class, unless the Professor is satisfied of his fitness to enter the Higher Class.

IV. It is in the power of any Student, who has given attendance during one or more Sessions in any Scottish University, to complete his Course of Study, by giving attendance in the University of Edinburgh during the remaining Sessions of his Course; provided always that every such Student gives attendance in the University of *Edinburgh* during, at least, the *last Two Sessions* of his Course; and provided also that he produces, to the satisfaction of the Faculty of Arts of the University of Edinburgh, Class Certificates of his attendance at the former Scottish University—but he must be examined in all the three Departments necessary for the Degree of Master of Arts by the Examiners of the University of Edinburgh.

V. Candidates for the Degree of Master of Arts must be examined on all the subjects of instruction embraced in the above Course of Academical Study; and the examinations may be conducted wholly in writing or partly *viva voce*.

VI. Any Student who has completed his attendance on the Classes of

LATIN AND GREEK,

required in the prescribed Course of Study, may be examined on these Subjects, at any Examination for Degrees, although he may not have completed his attendance on the other Classes of the prescribed Course.

In like manner, any Student who has completed his attendance on the Classes of

LOGIC AND METAPHYSICS, MORAL PHILOSOPHY, AND RHETORIC AND ENGLISH LITERATURE,

may be examined on these Subjects, at any Examination for Degrees, although he may not have completed his attendance on the other Classes of the prescribed Course.

Also in like manner, any Student who has completed the attendance required in the prescribed Course of Study on the Classes of

MATHEMATICS AND NATURAL PHILOSOPHY,

may be examined on these subjects at any Examination for Degrees, although he may not have completed his attendance on the other Classes of the prescribed Course.

And if such Student shall satisfy the Examiners, when so examined, in the Department of CLASSICAL LITERATURE,

which comprehends Latin and Greek—or in the Department of PHILOSOPHY, which comprehends Logic and Metaphysics, Moral Philosophy, and Rhetoric and English Literature—or in the Department of MATHEMATICS and PHYSICS, which comprehends pure Mathematics and Natural Philosophy, he shall receive from them a CERTIFICATE to that effect, and he shall not be examined again in the same Department, as a condition of his taking the Degree of Master of Arts.

VII. Students who have fulfilled the preceding conditions, and have passed the ordinary Examinations on the several subjects embraced in the prescribed Course of Study, are, after signing the *Sponsio Academica*, and on presenting themselves at the Public Ceremonial of Graduation in April, entitled to receive the Degree of Master of Arts; and their names are published in alphabetical order, in the Graduation Lists.

VIII. At the Public Ceremonial of Graduation in Arts, held annually in April, the Degree of MASTER is conferred by the Chancellor or the Vice-Chancellor of the University, in name of the Senatus Academicus. Degrees are not conferred on any who are not present at the Graduation Ceremonial, and who have not signed the *Sponsio*, although they may have passed all their examinations. Those who are presented to receive the degree must appear in Academical costume, and with the hood proper to the Degree.[1]

IX. Fees for Examination must be paid by Candidates in advance, when they intimate their names and addresses to the Clerk of the University. The Examination fee for the Degree of Master of Arts is *Three Guineas*. The fee for Examination of each of the three Departments mentioned in Article VI. is *One Guinea;* and no further fee than the sum of *Three Guineas* is payable by any Candidate for admission to the Degree in Arts, whether with or without Honours.[2]

GRADUATION IN ARTS WITH HONOURS.

I. Students who have passed the Examinations in the three Departments embraced in the Course of Study prescribed for the Degree of Master of Arts, may, before taking the Degree, offer themselves for a further examination, with a view to Graduation with Honours; and that either in the same year in which they

[1] Black silk lined with *white*.

[2] Immediately after obtaining the Degree, Candidates should apply for their Diplomas at the Matriculation office. There is no additional charge for the Diploma. Any Graduate who cannot apply personally is required to give written authority to some person to receive and give a receipt for it.

have completed the Pass or Ordinary Examinations, or in a future year. Also, any Student who desires to offer himself for Examination with a view to graduation with Honours, in any one or more departments, may proceed to such Honours Examination, after sufficient attendance on the classes in the department or departments in which he desires to offer himself, without having previously passed the Examination in such department or departments for the Degree of Master of Arts without Honours; and if such Student, in the opinion of the Examiners, fails to attain the standard for Honours in any department, but attains to the standard of the Examination for graduation without Honours, he shall be held to have passed in that Department for the Degree of Master of Arts, without Honours; but if, in any such department, he fails to attain to the standard of the Examination for graduation without Honours he shall not be entitled, until he shall have passed in that department, to the Degree of Master of Arts. And no person, without the permission of the Senatus Academicus, can be admitted to an Examination for *Honours*, after he has ceased, for more than one Winter Session, to be a Matriculated Student, in attendance on a class or classes in the University.

II. There are four departments for Graduation in Arts with Honours, in any one or more of which, subject to the preceding Regulation, Students may present themselves for further Examination, viz.:—

A. CLASSICAL LITERATURE, .	Latin. Greek.
B. PHILOSOPHY, . . .	Logic. Metaphysics. Moral Philosophy.
C. MATHEMATICS AND PHYSICS,	Pure Mathematics. Natural Philosophy.
D. NATURAL SCIENCE, . .	Geology. Zoology. Chemistry. Botany.

III. In each of the first three of the above-mentioned departments, viz., in Classical Literature, in Philosophy, and in Mathematics, there are *two* Grades of Honour, each representing, as nearly as possible, a uniform standard of qualification, and denominated respectively the FIRST CLASS and the SECOND CLASS. The names of candidates entitled to Honours, in each of these classes, are arranged in alphabetical order.

IV. In the department of Natural Science, there is only *one* class for Honours; and the names of candidates entitled to Honours in that class are arranged in alphabetical order.

V. The names of candidates to whom the Examiners award a First or Second Class in the Examination for Honours, will be retained in the UNIVERSITY CALENDAR, in the Class Lists, under the year in which the Honours were taken by them, and in the department or departments in which they were so classed.

ENTRANCE EXAMINATION FOR CURRICULUM OF THREE SESSIONS—SESSION 1890-91.

In terms of *Regulation* II. (see p. 109), Entrance Examinations will be held by the Faculty of Arts in the *Examination Hall* of the University, on *Saturday, the 18th of October* 1890, at *Nine* o'clock, at which time Students entering their *First* Session in the Faculty of Arts, who desire to be enabled to complete their Curriculum in Arts within Three Winter Sessions, must present themselves for examination. At these Examinations they will be asked to translate—

1. A simple passage from Livy or Cicero into English;
2. A passage of plain English into Latin;
3. An easy passage (or passages), prose or verse, *e.g.*, from Xenophon, Lucian, Homer, for translation into English;
4. A few easy sentences from English into Greek.

Some questions will be added in Greek Accidence and Elementary Syntax.

N.B.—Great stress will be laid on grammatical accuracy in the translation from English into Latin Prose.

The above Examination in Latin and Greek is the only one necessary for admission to a Three Sessions' Curriculum.

The Senior Local Examinations Certificates of Edinburgh, Glasgow, Aberdeen, St Andrews, Oxford, and Cambridge; Royal University of Ireland Pass with Honours; the Honours and Higher Grade Schools Leaving Certificate of the Scotch Department; and the Oxford and Cambridge Schools' Examination, are accepted pro tanto *as qualifying for a Three Years' Curriculum.*

ENTRANCE EXAMINATION IN MATHEMATICS.

Students at the commencement of the *First* Session of their attendance at the University who desire, with a view to a Degree,

to attend the SECOND Mathematics Class, without attending the First, will be examined on *Monday, the 20th of October*, at *Nine* o'clock.

The subjects of Examination will be—Arithmetic; Euclid, Books i., ii., iii., iv., and vi., or their equivalent; Elementary Algebra and Trigonometry. In the examination in Geometry the questions will be set so as to allow freedom of teaching as far as possible. More stress will be put upon accurate knowledge of Geometrical principles, and ability to apply them in simple exercises, than upon the reproduction of demonstrations according to Euclid's or any other special text.

*** Specimens of the Entrance Examination Papers for 1889 in Latin, Greek, and Mathematics are given at page 144.

The following Examinations will exempt from one Session's attendance on the Class of Mathematics, viz.:

The Senior Local Examinations Certificates of Edinburgh, Glasgow, Aberdeen, St Andrews, Oxford, and Cambridge; the Junior Local Examinations of Oxford, and Cambridge, provided that in each case the Candidates have taken the whole Examination in Euclid, Algebra, and Trigonometry, and have not merely passed in the minimum standard; Royal University of Ireland Pass with Honours; the Intermediate Examination of the University of London; the Honours and Higher Grade Schools Leaving Certificate of the Scotch Department.

N.B.—*The names of those who have passed the Examination for the Three Sessions' Curriculum, or the Entrance Examination in Mathematics, or both, will be published in the* UNIVERSITY CALENDAR, *along with the names of the Schools from which they have come, provided that they have matriculated and enrolled in the Classes for Session* 1890-91.

Matriculated Students who have passed either or both of these Examinations, or the equivalent Examinations elsewhere, will obtain the necessary Certificates to that effect in November by applying to the Dean of the Faculty of Arts.

PASS EXAMINATIONS FOR MASTER OF ARTS.

PROGRAMME FOR OCTOBER 1890 AND APRIL 1891.

Pass Examinations for the Degree of Master of Arts will be held in the *Examination Hall* of the University in *October* 1890, on the four following days, viz., Tuesday the 14th, Wednesday the 15th, Thursday the 16th, and Friday the 17th. The Examinations will be conducted in the following order :—

First Day, Tuesday, 14th October.—Latin (9 to 11 and 11.30 to 1.30); Mathematics (2.30 to 4.30).

Second Day, Wednesday, 15th October.—Mathematics (9 to 11); Greek (11.30 to 1.30 and 2.30 to 4.30).

Third Day, Thursday, 16th October.—Logic and Psychology (9 to 12); Natural Philosophy (1 to 4).

Fourth Day, Friday, 17th October.—Moral Philosophy (9 to 12); Rhetoric and English Literature (1 to 4).

Pass Examinations for the Degree of Master of Arts will also take place in *April* 1891, on the four following days, viz., Monday the 6th, Tuesday the 7th, Wednesday the 8th, and Thursday the 9th. The Examinations will be conducted in the following order :—

First Day, Monday, 6th April.—Latin (9 to 11 and 11.30 to 1.30); Mathematics (3 to 5).

Second Day, Tuesday, 7th April.—Mathematics (9 to 11); Greek (11.30 to 1.30 and 2.30 to 4.30).

Third Day, Wednesday, 8th April.—Logic and Psychology (9 to 12); Natural Philosophy (1 to 4).

Fourth Day, Thursday, 9th April.—Moral Philosophy (9 to 12); Rhetoric and English Literature (1 to 4).

The subjects for the Pass Examinations in October 1890 and in April 1891 are as follows :—

A.—Department of Classical Literature.

Latin for October 1890 *and April* 1891.

Horace, *Odes*, iii., iv.; *Epistles*, ii., and *Ars Poetica*.
Virgil, *Eclogues*, *Georgics*, i., ii.
Cicero, *Second Philippic*.
Tacitus, *Annals*, xiv.
A passage from a Latin Author not prescribed.
Latin prose composition.

Roman History.—A general knowledge of the history of the Republic, and a special knowledge of the periods embraced in the books prescribed.

Roman Literature.—A general knowledge of the course of Roman Literature till the end of the Augustan age, and a more special knowledge of the Lives and Works of Virgil, Horace, Cicero, and Tacitus.

Translation from English into Latin prose is required of every Candidate.

Greek for October 1890 *and April* 1891.

Homer, *Odyssey*, iv.
Aeschylus, *Agamemnon*.
Demosthenes, *De Corona*.
A passage from a Greek Author not prescribed.
Greek prose composition.
Greek History.—A general knowledge of Greek History to the death of Alexander, and a more minute knowledge of the period embraced by the life of Demosthenes.
Greek Literature.—The works of the prescribed Authors.
Laws of Hexameter and Iambic verse.

B.—Department of Philosophy.

Logic and Psychology.

The Class Lectures in Logic and Psychology.
Fowler's *Deductive Logic* and *Inductive Logic*.
The Professor's "*Locke*," in "Philosophical Classics" (Blackwood); "*Selections from Berkeley*" (third edition),—"Editor's Introduction"; "Principles of Human Knowledge" (Part I. sect. 1-84); "Divine Visual Language: A Dialogue;" Prefatory Notes (pp. 3-7; 147-153; 309-12), and the footnotes to the "Principles" and to the "Dialogue."

Moral Philosophy.

The Class Lectures—"Handbook of Moral Philosophy;" Butler's Sermons, i., ii., iii., xi.; Sidgwick's "Outlines of the History of Ethics," Chapters ii. and iv.

Rhetoric and English Literature.

The Principles of English Composition and Style: Class Lectures.
History of the English Language: The First Five Chapters of Morris's "Historical Outlines of English Accidence."
History of English Literature, more particularly from 1350 to 1688: Lectures, with Morley's Text Book, and the portions of Hallam's "Literature of Europe" that relate to English writers of the times mentioned.
Special Readings required:—
Shakespeare's *Tempest* and *Julius Cæsar*.
Milton's *Areopagitica* and Books i. and ii. of *Paradise Lost*.
Johnson's *Life of Cowley*.
Wordsworth's *Prose Prefaces, &c., to his Poems*.

C.—Department of Mathematics and Physics.

Mathematics.

Arithmetic.
Euclid, Books i., ii., iii., iv., vi., and xi., or their equivalent, with their application to Mensuration.
Algebra, Trigonometry, Conic Sections, Geometrical and Analytical.

Candidates must show sufficient knowledge in each of the subjects of examination.

Natural Philosophy.

Elementary Dynamics.
Astronomy and Experimental Physics.

Candidates must show sufficient knowledge both of Dynamics and of Experimental Physics.

The names and addresses of Candidates for the Degree of Master of Arts, or for Certificates in any of the three departments, who intend to present themselves for examination in October 1890, must be given in at the *Matriculation Office* not later than the 6th of October; and for the Examinations in April 1891, not later than the 20th of March. The Graduation Fee (if not previously paid) must be paid when the Candidate announces his name.[1] Candidates must at the same time state the Department or Departments (if any) which they have already passed.

In making this announcement in *October*, Candidates must present, at the *Matriculation Office*, their Matriculation Cards, with the relative Class Certificates, and Certificates for a Three Sessions' Curriculum, required in the Department or Departments for which they enter their names. For the Examinations in *April* 1891, the Matriculation Cards and Certificates must be shown *on or before Saturday, the 4th of April.* When the Candidate has exhibited all his Matriculation Tickets and Certificates, the Clerk will stamp on his Receipt, "Certificates examined," which will entitle him to admission to the examination, on producing his Receipt at the Examination Hall.

Candidates who have, in a former year, passed all the examinations necessary for Graduation, but without having taken the Degree, and who desire to present themselves for Graduation

[1] When names are not entered nor fees paid on or before the stated dates, an additional or late entry fee of ten shillings must be paid before the Candidate can be admitted to examination. A Candidate is not held to be entered for the Examination until his Name is entered, the Fee paid, and all the necessary Certificates, &c., lodged.

in April 1891, must, *at least ten days previously*, enter their names and addresses, and show their Departmental Certificates, at the *Matriculation Office*.

Candidates who have passed all the Departments for the Degree of M.A., but who do not desire to graduate in April, may have their names printed in the Pass Lists,—provided they enter their names and exhibit their Departmental Certificates at the *Matriculation Office* at least one clear day before the date of Graduation; and in like manner, those who complete their Examinations in October may have their names inserted in the printed Pass Lists in October,—provided they enter their names and show their three Departmental Certificates within one day after the announcement of the results of the Examinations has been posted on the Boards at the University.

Candidates for Examination in any Department, or for Graduation, must be Matriculated Students of the year in which they appear for Examination or for Graduation.

Every Candidate for Graduation is required to exhibit his Departmental Certificates, and to pay the Fee of £1 for Registration as a Member of the General Council, before he can be presented for Graduation, which should be done at least one clear day before the date of Graduation.

The fees for Matriculation, for Examinations for Degrees, and for Registration of Graduates as Members of the General Council, are payable at the Matriculation Office, University. When Candidates cannot attend personally to pay the fees, they should transmit them to the *Clerk of the University*, by crossed *Post Office* or *Postal Orders*, or by *Bank Drafts only*, and not by cheques on private accounts.

EXAMINATIONS FOR GRADUATION IN ARTS WITH HONOURS.

(*Examinations for Honours are held in April only.*)

Programme for April 1891.

The Examinations for Honours will begin on Friday, 10th April 1891.

The Examinations will be conducted in the following order:—

Classical Literature.	Latin, 10 April, 9 to 12, and 1 to 4; 11 April, 9 to 12.
	Greek, 11 April, 1 to 4; 13 April, 9 to 12, and 1 to 4.

PHILOSOPHY. { Logic and Metaphysics, 10 April, 9 to 12, and 1 to 4; 11 April, 9 to 12.
Moral Philosophy, 11 April, 1 to 4; 13 April, 9 to 12, and 1 to 4.

MATHEMATICS AND PHYSICS. { Mathematics, 10 April, 9 to 12, and 1 to 4.
Natural Philosophy, 11 April, 9 to 12, and 1 to 4.

NATURAL SCIENCE. { 21 and 22 July 1890, and 23 and 24 March 1891.

The subjects of Examination are as follows :—

A.—DEPARTMENT OF CLASSICAL LITERATURE.

Latin for April 1891.

Lucretius, i., ii., iii., v.
Virgil, *Eclogues and Georgics*.
Horace.
Cicero, *Epist. ad Famil*, v.-viii. *Orationes*, *Pro Murena*, *Pro Cn. Plancio*, *Pro P. Sestio*.
Tacitus, *Annals*, i.-vi.
Latin prose composition.
Translation from Authors not prescribed.
Roman History.—From B.C. 90 to A.D. 37. A general knowledge of the previous history will be expected.
Roman Literature.—A general knowledge of the course of Roman Literature, and a more minute knowledge of the Authors prescribed.

Latin for April 1892.

Plautus, *Pseudolus*, *Rudens*.
Terence, *Phormio*.
Horace,
Juvenal, with omission of ii., vi., ix.
Martial, Selections for the Use of the Humanity Classes, i., ii., ix.-xii.
Cicero, *Epistolæ ad Q. Fratrem; ad Atticum* i.-iv., and vii., viii.
Tacitus, *Annals*, xi.-xvi.
Latin prose composition, and translation from Authors not prescribed.
Roman History.—First century B.C. and first century A.D. A general knowledge of the previous history will be expected.
Roman Literature.—A general knowledge of the course of Roman Literature, and a more minute knowledge of the Authors prescribed.

Greek for April 1891.

Homer, *Iliad*, xiii.-xxiv.
Pindar, *Olympian and Pythian Odes.*
Thucydides, Books v.-vii. (inclusive).
Plato, *Gorgias* (Thompson's Edition).
Aristotle, *Poetics* (Vahlen's text).
Greek Prose Composition.
Translation from Authors not prescribed.
Greek History.—A general knowledge of Greek History to the death of Alexander, and a minute knowledge of the period embraced by the Peloponnesian War.
Greek Literature.—A general knowledge of the course of Greek Literature, with a more minute knowledge of the Authors prescribed.
The principles of Comparative Philology as applied to Latin and Greek. Text-book recommended, "Sounds and Inflexions in Greek and Latin," by King and Cookson.

Greek for April 1892.

Homer, *Odyssey*, i.-xii.
Sophocles, *Œdipus Col.* and *Antigone.*
Theocritus.
Thucydides, Books vii., viii.
Plato, *Phaedrus* (Thompson's Edition).
Aristotle, *Poetics* (Vahlen's text).
Greek Prose Composition.
Translation from Authors not prescribed.
Greek History.—A general knowledge of Greek History to the death of Alexander, and a minute knowledge of the period embraced by the Peloponnesian War.
Greek Literature.—A general knowledge of the course of Greek Literature, with a more minute knowledge of the Authors prescribed.
Greek Grammar.—As a special subject *Monro's* Homeric Grammar.
The principles of Comparative Philology as applied to Latin and Greek. Text-book recommended, "Sounds and Inflexions in Greek and Latin," by King and Cookson.

B.—Department of Philosophy.

Logic and Metaphysics for April 1891.

The Lectures, including those in the Class of Metaphysics.
The Professor's "*Berkeley*," in "Philosophical Classics" (Blackwood); also the "*Selections*" (third edition).
Exercises in Hamiltonian as well as in the ordinary logical forms.

A competent knowledge of the History of Philosophy.
Plato, *Theætetus.*
Aristotle, *Metaphysics*, Book i.
Descartes, *Meditations.*
Locke, *Essay on Human Understanding*, in connection with "*Locke*" in "Philosophical Classics" (Blackwood).
Hume, *Inquiry concerning Human Understanding.*
Kant, *Critique of Pure Reason.*
Hegel, in "Philosophical Classics" (Blackwood).

Moral Philosophy for April 1891.

The Class Lectures for Advanced Students.
Plato's *Protagoras.*
Plato, *Republic*, i.-vii.
Aristotle, *Ethics* (omitting v., vi., vii.)
Spinoza, *Ethics.*
Hegel's *Philosophy of the State* (Grigg's German Philosophical Classics).
Reid's *Active Powers*, Essays ii., iv., v.
Kant, *Metaphysic of Ethics.*
Sidgwick's *Methods of Ethics*, Books iii. and iv.
Green's *Prolegomena of Ethics.*

C.—Department of Mathematics and Physics.

Pure Geometry, Algebra, Theory of Equations, including Determinants, Trigonometry (Plane and Spherical), Analytical Geometry, Differential and Integral Calculus, Calculus of Finite Differences. (The Candidate may, if he please, profess the Elements of Quaternion Analysis.)

Experimental Physics; Analytical Dynamics and Thermodynamics; *imperative.*

In addition, two or more branches of Elementary Mathematical Physics (such as Geometrical or Physical Optics, Statical or Voltaic Electricity, Capillarity, &c.). These may be selected by the Candidate.

D.—Department of Natural Science.

GEOLOGY.
ZOOLOGY.
CHEMISTRY.
BOTANY.

The Candidate may select any Two of the above Subjects, in which he will be subjected to examinations equivalent to those in the same subjects for the *Second* B.Sc. in Physical and Natural Science.

Candidates who propose to present themselves at the Examination for Honours in April 1891, in Sections A, B, and C, must

enter their names and addresses at the *Matriculation Office*, not later than the 20th of March—specifying the Department or Departments for which they offer themselves, and Candidates for Honours in Section D, in July 1890, and in March 1891, are required to enter their names, and specify the subjects in which they offer themselves, on or before 7th July 1890, and 9th March 1891 respectively. They must be Matriculated Students of the year in which they present themselves for Examination or for Graduation, and must pay the Fee of £1 for Registration, as explained above.

No one who has ceased for more than one Winter Session to be a Matriculated Student in attendance on a class or classes in the University can be admitted to an Examination for *Honours* without permission of the Senatus Academicus.

SPONSIO ACADEMICA TO BE SIGNED BY GRADUATES IN ARTS.

Nos qui Nomina subsignamus Magisterii titulo jamjam donandi Spondemus nos in omni debitae gratitudinis officio erga Universitatem Academicam Edinburgensem ad extremum vitae halitum perseveraturos.

GRADUATES IN ARTS.

HONOUR LISTS—1886-1890.

The names of all Graduates in Arts with Honours previously to 1889 will be found in the List of Graduates of the University published in 1889.

The contractions Class., Phil., Math., and Nat. Sc., indicate the Departments of Classics, Philosophy, Mathematics, and Natural Science, respectively; and the Italic Numerals, i. and ii., indicate First and Second Class Honours respectively.

1886.

Phil. i., William Caldwell, Robert Latta, William Mitchell, Ivor J. Roberton.

Phil. ii., James C. Anderson.

Math. i., John T. Holliday, John Mackenzie, Alexander Morgan, David Tweedie.

Nat. Sc., Victor V. Branford, Alex. Drysdale, Geo. D. Hutton.

1887.

Class. i., John D. Rose.

Phil. i., John Davidson, Thomas E. Sandeman, Patrick C. Simpson, William B. Tough.

Math. i., James Crocket, Charles E. Grange, John King, David A. Welsh.

Math. ii., George Laurie, Alex. Moffat.

Nat. Sc., Charles E. Grange.

1888.

Class. i., Jas. Gilchrist Goold, Geo. Smith, Alexander Douglas Thomson.
Class. ii., George Millie Gibb, Archibald Paterson.
Phil. i., William Ingram.
Phil. ii., Wm. Wallace Duncan Campbell, John Dow Fisher Gilchrist, George Currie Martin.
Math. i., Alex. Wilmer Duff, Jas. Goodwillie, David Beveridge Mair.
Nat. Sc., Charles Hogg, Robert Murray Leslie, David Rankine, William Lyall Wilson, Thomas Winter.

1889.

Class. i., Patrick Duncan, Harry Angus Alexander Kennedy, Thomas Ross Mills, Jas. Cruickshank Smith, John Tennant.
Class. ii., Robert Alex. Falconer, Alexander Harris Hutt.
Phil. i., Charles Mackinnon Douglas, William George Smith.
Phil. ii., David Walton Vaughan.
Math. i., James Ireland Craig, William Andrew Knowles, Jas. Fairbairn M'Kean.
Nat. Sc., Alexander Bremner, John Brown Clark, David Davidson, John Melvin Lowson, Robert Stewart M'Dougall, John Machray, John Hally Meikle, Harry Fisher Menzies, Alexander Gordon Wallace, John Young.

1890.

Class. i., John Maclennan, James Watt.
Class. ii., William Brereton Dennison, William Barron Stevenson.
Phil. i., Andrew Nisbet Bogle, Thomas Dixon Rutherford, James Stewart.
Phil. ii., Henry Reynolds Brown, William Elmslie Wilkie Brown Dempster, Arthur Herbert Gray.
Math. i., Charles Tweedie.
Nat. Sc., James Adamson, William Lewis Martin.

In addition to the above, one Candidate passed the Examinations for First Class Honours in Mathematics in April 1890, and two passed the Examinations for Second Class Honours, viz., one in Philosophy and one in Mathematics.

DEGREE OF MASTER OF ARTS (ORDINARY EXAMINATION).

1st August 1889.

George Beale.
Hugh Mackay.
Alexander Taylor.

14th October 1889.

John Finlayson Macphail.
William Robertson.

30th November 1889.

James John Haldane Burgess.
William Dickson Learmount.
Johnstone Murray.

18th April 1890.

William David Adams.
James Alexander.
William Alfred Johnstone Alexander.
John Anderson.
George Rule Atkinson.
John Black.
Thomas Blyth.
John Frederick Kytchen Branford.
George Thomson Brough.
William Elmslie Wilkie Brown.
Thomas Sanderson Hepburn Burns.
William Thomas Cairns.
Charles Watson Calder.
James Goodfellow Christie.
Archibald Brown Clark.
Robert Cochrane.
Thomas Craigie.
John Dawson Crawford.
Robert Dickson.
Alexander Dunsmore.
Adam Wightman Fergusson.
John Fergusson.
Maxwell Fleming.
John Forbes.
Ian Roderick Fraser.
William Gibb.
Samuel James Gilfillan.
Thomas Scott Glover.
James Grant.
James Nichol Grieve.
Louis Carr Hallard.
Andrew Hamilton.
William Baikie Heddle.
James Henderson.
Joseph Hibbs.
Ernest William Hobbs.
John Hunter.
Alexander Hutcheson.
James William Jack.
Archibald Moncrieff Jamieson.
Walter Edward Johnstone.
Jules Kirke de Dreux Kunz.
Robert Scarth Valentine Logie.
George Lowe.
Peter M'Cowan.
James Mathison Macfie.
William M'Gowan.
Ian MacIntyre.
Dugald Maclean.
John Anderson MacLean.
Alexander M'Tavish.
William Anderson Martin.
Thomas Menzies.
William Miller.
John Muirhead.
James Iverach Munro.
Hotchkin Haynes Murray.
Archibald David Mutter.
William Kerr Neil.
John Wyld Pitcairn.
Alexander Dow Porteous.
George Readdie.
John Ritchie.
James Alexander Robertson.
James William Robertson.
William Scott.
Herbert Samuel Prothero Simon.
Patrick Sinclair.
James Alexander Somerville.
William Souter.
Robert M'Gavin Spence.
Henry James Stevenson.
William Stoddart.
William Jeremiah Street.
William Alexander Tait.
John Kerr Tasker.
Frederick James Thomson.
Hermann Walter.
Bowmont James Henry Robert Weddell.
James Wedderspoon.
William Wishart.
John Young.
John Brown Young.

In addition to the above, eleven Candidates passed the Ordinary Examinations in the three Departments, but without at present taking the Degree.

At the Examinations in October 1889, eleven Candidates passed in the Department of Classical Literature, twenty in the Department of Mental Philosophy, and twenty-four in the Department of Mathematics.

At the Examinations in April 1890, ninety-seven Candidates passed in the Department of Classical Literature, one hundred and ten in the Department of Philosophy, and eighty-nine in the Department of Mathematics.

REGULATIONS FOR SCHOOLMASTER'S DIPLOMA.

1. The Diploma is conferred only on Graduates in Arts of the University of Edinburgh.

2. Each Candidate must have matriculated in the University for the year in which he presents himself for the Diploma.

3. Each Candidate must have attended the Class of the Theory, Art, and History of Education in the University.

4. Each Candidate must pass an Examination in the Theory, Art, and History of Education, to be conducted by the Professor of that subject, and an Examiner appointed by the University Court.

5. The subjects of Examination are announced annually in the *University Calendar*.

6. Each Candidate must give evidence either :—

(*a.*) That he has attended a Course of Practical Instruction in a Training College for Teachers ; *or*

(*b.*) That he possesses the Government qualification in the practice of teaching required of Graduates, and provided in the "Scottish Code"; *or*

(*c.*) That he has taught publicly for at least one year in a School ; and holds such a certificate of practical skill from the Head Master of that School as may be considered satisfactory by the University.

7. Each Candidate must satisfy the University of his practical aptitude as a Teacher in some special Subject or Subjects in which he has received instruction in the University, or in any Institution recognised by the University as qualifying for Degrees.

8. Each successful Candidate will receive a Diploma signed by the Vice-Chancellor of the University, or, in his absence, by the Principal or the Senior Professor. The Diploma, which will be delivered at a public meeting for conferring Degrees, states the special subject or subjects in the teaching of which the Candidate has satisfied the University of his practical aptitude.

9. This Diploma is of two grades : one for Masters of Arts with Honours in any Department, specially qualifying them for Secondary

Schoolmasterships; the other for those who have taken the ordinary Degree of M.A.

10. The Fee for the Diploma is £2, 2s.

The Diploma has been conferred on the following Candidates:—

A.—General Diploma and Diploma for Secondary Schools.

1887—John Edward Vernon, M.A.
1890—Robert Stewart M'Dougall.

B.—General Diploma.

1887—Hugh Wilkie, M.A.
1888—D. Bogie, M.A.; J. S. Lawson, M.A.; C. H. Owen, M.A.
1889—Donald Brims, M.A.; Charles Smith, M.A.

The next Examination will take place on Saturday, 28th March 1891, at 10 o'clock, and Candidates are required to enter their names and pay the fee at the *Matriculation Office* on or before 20th March.

The subjects are:—The Lectures of the Professor of Education (Theory, History, and Art); Locke's "Thoughts on Education" (Moral Training); also, Locke "On the Conduct of the Human Understanding;" "Language and Linguistic method in the School," by Professor Laurie; Milton's "Tractate on Education"; Comenius's "Great Didactic."

A short thesis will be prescribed to be written in the Examination Room on a subject treated in one or other of the above books.

REGULATIONS FOR CERTIFICATE OF "LITERATE IN ARTS." (L.A.)

The following are the Regulations for this Certificate:—

1. The Certificate is open to persons who have been students in the Faculty of Arts for not less than Two Sessions; and who have during that time given attendance on not less than five classes in the said Faculty, so as to include four at least of the seven subjects necessary for Graduation in Arts. Of these Sessions at least one, and of the necessary classes at least two, must have been in the University of Edinburgh.

2. The examinations for the Certificate, in the four (or five) subjects which are also necessary for the degree of Master of Arts, is the ordinary graduation examinations in Arts in such subjects; and the examination in any subject not in the course of study necessary for the degree of Master of Arts is of a standard equivalent to that of the ordinary graduation examinations in Arts.

3. The examinations for the Certificate may be taken either at one or at two periods, at the option of the Candidate. When divided, the First examination must embrace at least two out of the five necessary subjects; the Second examination must embrace the remaining subjects.

4. The fee for the Certificate of Literate in Arts is two guineas. When the five necessary subjects are all taken at one examination, in April or in October, the fee is £2, 2s.; and when the examination is divided the fee is £1, 1s., on each of the two occasions.

The names and addresses of Candidates for the title of LITERATE IN ARTS who desire to be examined in *October* 1890 must be entered at the *Matriculation Office*, not later than the 6th of October; and of those who desire to be examined in *April* 1891 not later than the 20th of March, when the Fee must be paid. They must shew the necessary Matriculation Cards and Class Certificates at the *Matriculation Office*, on or before the 6th of October, for the October Examinations, and on or before the 4th of April, for those in April. In entering their names, Candidates are required to mention the subjects on which they desire to be examined, and the subjects (if any) in which they have already passed, with the date of passing. When the Candidate has exhibited all his Matriculation Tickets and Certificates, the Clerk will stamp on his Receipt, "Certificates examined," which will entitle him to admission to the examination, on producing his Receipt at the Examination Hall.

The October and April Examinations for the certificate of L.A. will be held on the days and at the hours fixed for the ordinary examinations for the degree of Master of Arts and by means of the same examination papers, in all the subjects for the title of L.A. that are also necessary for the degree of M.A.

The next Examination on Education will take place on Saturday, 28th March 1891, at 10 o'clock.

Those candidates who select the "Theory, History, and Art of Education" as one of their five subjects, will be examined on the Professor's Lectures, Comenius's Great Didactic, Herbert Spencer on Education, and Locke's "Conduct of the Understanding."

1889.

James William Jack.
Andrew Paterson Melville.
Thomas Binning Porteous.

Arts Entrance Examinations.

The following have passed the Entrance Examination necessary for the Three Sessions Curriculum in Arts, October 1889:—

The following have passed both in Latin and in Greek:—

T. Graham Bailey, George Watson's College: A. Claude M. Bell, George Watson's College; William Brander, Private Tuition; A. Keith Campbell, Montrose Academy; Robert P. Davidson, George Watson's College; John M. Dalziel, Dollar Institution; Thomas Finlay, Daniel Stewart's College; Robert Godfrey, Daniel Stewart's College; Alexander H. Gray, George Watson's College; Gavin Grey, George Watson's College; David G. Hamilton, George Watson's College; John Henderson, Morebattle School; David N. C. Hogg, Dollar Institution; Hugh L. Jackson, Royal High School, Edinburgh; W. M. Landale, Fettes College; Alexander F. Lay, Kelso High School; Angus Macdonald, George Watson's College; Robert Macfie, George Watson's College; Norman Mackay, Hutcheson's Grammar School, Glasgow; John Mackintosh, George Watson's College; S. L. F. M'Lauchlan, Merchiston Castle School; Kenneth Maclean, Royal High School, Edinburgh; William P. Martin, George Watson's College; George L. Moffat, George Watson's College; Walter G. Napier, George Watson's College; Hugh Reid, Ayr Academy; Alexander S. Riach, Daniel Stewart's College; Franklin Ross, George Watson's College; Robert W. Russell, Ayr Academy; Robert Samson, Ayr Academy; John A. Scott, Royal High School, Edinburgh; A. J. D. Smith, Darlington Grammar School; Charles A. Smith, Royal High School, Edinburgh; Alexander C. Sturrock, George Watson's College; H. F. L. Taylor, George Watson's College; David Waterston, Dundee High School; Thomas W. Wilson, Perth Academy; James Wood, Darlington Grammar School; James Wood, George Watson's College.

The following have passed in Latin only:—

William Biggam, Stranraer Academy; David A. Miln, Royal High School, Edinburgh; James R. Murdoch, Private Tuition.

The following have passed in Greek only:—

Thomas Fraser, Raining's School, Inverness; John C. Stuart, Darlington Grammar School.

The following have passed in Mathematics:—

T. G. Bailey, George Watson's College; A. C. M. Bell, George Watson's College; W. Brander, Private Tuition; R. P. Davidson, George Watson's College; R. Fairbairn, George Watson's College; Thomas Finlay, Daniel Stewart's College; R. Godfrey, Daniel Stewart's College; A. H. Gray, George Watson's College; G. Grey, George Watson's College; D. G. Hamilton, George Watson's College; D. N. C. Hogg, Dollar Institution; H. L. Jackson, Royal High School, Edinburgh; W. M. Landale, Fettes College; A. F. Lay, Kelso High School; Angus M'Donald, George Watson's College; G. Macdougall, Ecclefechan Public School; R. Macfie, George Watson's College; W. G. Napier, George Watson's College; Franklin Ross, George Watson's College; R. Samson, Ayr Academy; J. A. Scott, Royal High School, Edinburgh; A. J. D. Smith, Darlington Grammar School; J. C. Stuart, Darlington Grammar School; H. F. L. Taylor, George Watson's College; Thomas W. Wilson, Perth Academy; James Wood, Darlington Grammar School; James Wood, George Watson's College.

Competitive Examinations for Bursaries in Arts.

HONOUR LIST.

October 1889.

The following Candidates, entitled to distinction, are arranged in the order of merit :—

I. Students entering First Session.

1. Robert P. Davidson, Geo. Watson's College.
2. Walter G. Napier, George Watson's College.
3. Gavin Grey, Geo. Watson's College.
4. Robert Samson, Ayr Academy.
5. James Wood, Geo. Watson's Coll.
6. A. Claude M. Bell, George Watson's College.
7. Robert Godfrey, Dan. Stewart's Coll.
8. T. Grahame Bailey, George Watson's College.
9. H. F. L. Taylor, Geo. Watson's Coll.
10. Thomas Finlay, Dan. Stewart's Coll.
11. David G. Hamilton, Geo. Watson's College.
12. John A. Scott, Royal High School, Edinburgh.
13. Alexander H. Gray, Geo. Watson's College.
14. William Brander, Private Tuition.
15. A. Keith Campbell, Montrose Acad.
16. Robert Macfie, Geo. Watson's Coll.
17. Franklin Ross, George Watson's College.
18. David N. C. Hogg, Dollar Institution.
19. Hugh L. Jackson, Royal High School, Edinburgh.
20. Thomas W. Wilson, Perth Academy.
21. David Waterston, High Sch., Dundee.
22. John Cuthbert Stuart, Grammar Sch., Darlington.
23. Chas. Aitchison Smith, Royal High School, Edinburgh.
24. James Wood, Grammar School, Darlington.
25. John M. Dalziel, Dollar Institution.
26. Hugh Reid, Ayr Academy.
27. George L. Moffat, Geo. Watson's Coll.
28. Angus Macdonald, George Watson's College.
29. W. M. Landale, Fettes College.
30. Kenneth Maclean, Royal High Sch., Edinburgh.
31. Alex. Cossar Sturrock, George Watson's College.

George Heriot Bursaries.

1. Gavin Grey, George Watson's College.
2. Robert Samson, Ayr Academy.
3. Franklin Ross, George Watson's College.
4. A. Keith Campbell, Montrose Acad.
5. John M. Dalziel, Dollar Institution.
6. James Wood, Grammar School, Darlington.
7. David N. C. Hogg, Dollar Institution.
8. George L. Moffat, Geo. Watson's Coll.
9. Hugh L. Jackson, Royal High Sch. Edinburgh.
10. Hugh Reid, Ayr Academy.

II. Students entering Second Session.

1. Philip H. Hanson; 2. Thomas M'Vey; 3. James Burnet; 4. Peter Campbell.

III. Students entering Third Session.

1. James Mitchell; 2. R. G. M'Kerron; 3. John Turner; 4. A. M. Hunter; 5. W. F. Trotter; 6. M. MacInnes; 7. James S. Cairncross.

IV. Students entering Fourth Session.

1. John Forbes; 2. C. D. M'Intosh.

Class Prize Lists.

WINTER SESSION, 1889-90.

I.—HUMANITY.

THIRD CLASS.

PRIZES AND FIRST-CLASS CERTIFICATES.—1. James Watt, Dumfries (*Medallist*); 2. W. G. Wedderspoon, Edinburgh; 3. J. R. Currie, Ayr.

SECOND-CLASS CERTIFICATES.—4. W. B. Dennison, Edinburgh; 5. W. B. Stevenson, Forfarshire; 6. R. Mackintosh, Dundee; 7. W. G. C. Geekie, Annan.

PRIZE FOR LATIN PROSE COMPOSITION.—J. A. Norrie, Edinburgh. *Honourable Mention.*—James Watt, Dumfries; Hugh R. Mackintosh, Ross-shire.

PRIZE FOR LATIN VERSE.—H. Lovett. *Honourable Mention.*—W. G. Wedderspoon.

SENIOR CLASS.

PRIZES AND FIRST-CLASS CERTIFICATES.—1. R. P. Davidson, Wigtownshire; 2. H. P. Macmillan, Greenock; 3. A. C. Montgomerie Bell, Edinburgh, and George Henderson, Dundee—equal (*Medallists*); 5. Thomas W. Wilson, Perth; 6. James MacKenna, Dumfries; 7. Sydney Smith, Edinburgh; 8. James W. Grant, Grantown-on-Spey; 9. James F. Grant, Wick.

SECOND-CLASS CERTIFICATES.—10. R. Samson, Old Cumnock; 11. R. Macfie, Whithorn; 12. D. D. M'Tavish, Edinburgh; 13. David Waterston, Dundee; 14. W. J. Collier, Nairn; 15. W. S. Reid, Kilmarnock, and James Wallace, Aberdeenshire—equal; 17. W. R. Colville, London, and John Mackintosh, Inverness-shire—equal; 19. James Burnet, Edinburgh; 20. David Flett, Kirkwall; 21. Walter G. Napier, Edinburgh, and T. Grahame Bailey, Edinburgh—equal; 23. A. A. Wilson, Edinburgh; 24. Hugh L. Jackson, Edinburgh; 25. Franklin Ross, Edinburgh; 26. J. B. Young, Perthshire; 27. A. G. Bertram, Haddington; 28. G. L. Moffat, Edinburgh; 29. A. F. Lay, Kelso, and David Hird, Arbroath—equal; 31. Lawrence Ker, Edinburgh, and William Croall, Kelso—equal; 33. D. N. C. Hogg, Fife, and S. Carmichael, Comrie—equal.

PRIZES FOR LATIN PROSE COMPOSITION.—1. R. P. Davidson, Wigtownshire; 2. Hugh P. Macmillan, Greenock; 3. A. C. Montgomerie Bell, Edinburgh, and R. Samson, Old Cumnock—equal.

PRIZE FOR ROMAN LITERATURE AND HISTORY.—R. P. Davidson, Wigtownshire. *Honourable Mention.*—1. Hugh P. Macmillan,

Greenock; 2. W. S. Reid, Kilmarnock; 3. James F. Grant, Wick.

PRIZE FOR LATIN VERSE.—James MacKenna, Dumfries. *Honourable Mention.*—Hugh P. Macmillan, Greenock.

JUNIOR CLASS.

PRIZES AND FIRST-CLASS CERTIFICATES.—1. Edwin Rogerson, Banff; 2. J. M. Moor, Lauder; 3. Alexander Bain, Lauder (*Medallists*); 4. George W. Wilkie, Forfar; 5. James Beattie, Roxburghshire; 6. James Blair, Edinburgh; 7. Alexander D. Gilbert, Arbroath; William Robb, Addiewell; and J. D. Tweedie, Bo'ness—equal; 10. J. D. Gilruth, Auchmithie; 11. William Mackenzie, Burntisland, and Robert Hutton, Kirkcaldy—equal.

SECOND-CLASS CERTIFICATES.—13. Robert Godfrey, Edinburgh; 14. A. J. D. Smith, Darlington; 15. A. H. Gray, Lauder; 16. C. W. Wardrop, West Calder; 17. Richard Shields, Ross-shire; 18. Alexander M'Lennan, Fortrose; 19. J. Adamson, Dundee, and James Wood, Haddington—equal; 21. Henry J. G. Ross, Coupar-Angus, and J. C. Stuart, Darlington—equal; 23. James R. Maxwell, Inverkeilor, and James Drever, Stromness—equal; 25. J. L. Maclean-Watt, Dalkeith; 26. William Darling, Edinburgh; 27. G. MacDougall, Ecclefechan, and R. M. Moffat, London—equal; 29. James B. Baillie, East Lothian; 30. A. Duncan Smith, Dundee, and Thomas Fraser, Nairnshire—equal; 32. William Crear, Thurso, and R. D. Melville, Edinburgh—equal; 34. J. R. Murdoch, Edinburgh; 35. D. B. Thomson, Hawick, and W. P. Martin, Edinburgh—equal; 37. W. Paterson-Lindsay, Lanarkshire, and Alexander Innes, Campbeltown—equal; 39. Charles Corsar, Arbroath; Albert G. Mackinnon, Canada; George A. Ross, Edinburgh, and William Swanney, Kirkwall—equal; 43. George A. Robertson, Edinburgh; 44. D. Little, Roxburghshire.

PRIZES FOR LATIN PROSE COMPOSITION.—1. Edwin Rogerson, Banff; 2. C. W. J. Wardrop, West Calder; 3. James M. Moore, Lauder; 4. William Robb, Addiewell. *Honourable Mention.*—5. Robert Godfrey, Edinburgh; 6. George W. Wilkie, Forfar.

PRIZE FOR ROMAN HISTORY, ANTIQUITIES, AND LITERATURE.—1. James Beattie, Roxburghshire. *Honourable Mention.*—2. J. M. Moore, Lauder; 3. Edwin Rogerson, Banff; 4. A. D. Gilbert, Arbroath.

W. Y. SELLAR, LL.D., *Professor.*

II.—GREEK.

SENIOR CLASS.

PRIZES.—1. R. P. Davidson, Wigtownshire; 2. A. C. Montgomerie Bell, Edinburgh; 3. Hugh P. Macmillan, Greenock; (*Medallists*); 4. George Henderson, Dundee; 5. Sydney Smith, Edinburgh; 6. William S. Reid, Kilmarnock; 7. Robert Samson, Cumnock.

CERTIFICATES OF MERIT.—8. James MacKenna, Dumfries; Robert Macfie, Whithorn; Walter G. Napier, Edinburgh, and H. F. L. Taylor, Edinburgh—equal; 12. James Wallace, Aberdeenshire; 13. W. R. Colville, London; 14. T. W. Wilson, Perth; 15. W. T. Collier, Nairn, and H. L. Jackson, Edinburgh—equal; 17. A. A. Wilson, Edinburgh; 18. D. D. M'Tavish, Edinburgh; 19. A. F. Lay, Kelso; 20. J. Mackintosh, Kingussie; 21. D. Waterston, Dundee.

LITERATURE PRIZE.—A. C. M. Bell. *Honourable Mention.*—1. R. P. Davidson; 2. W. S. Reid; 3. G. Henderson and Sydney Smith —equal.

HISTORY PRIZE.—R. P. Davidson. *Honourable Mention.*—1. W. R. Colville, London; 2. H. P. Macmillan, A. C. M. Bell, and R. Macfie—equal.

COMPOSITION PRIZES.—1. R. P. Davidson; 2. A. C. M. Bell.

JUNIOR CLASS.

PRIZES.—1. Alex. Bain, Lauder, Berwickshire; 2. William Robb, Addiewell (*Medallists*); 3. James M. Moore, Lauder, Berwickshire; 4. Edwin Rogerson, Banff; 5. James Beattie, Roxburghshire; 6. Thomas Helme, Gatehouse, Kirkcudbright; 7. J. C. Stuart, Darlington; 8. Robert Godfrey, Edinburgh; 9. J. B. Baillie, East Lothian, and Alex. Maclennan, Fortrose—equal; 11. Jas. C. Adamson, Dundee, and Jas. R. Maxwell, Inverkeilor—equal; 13. Alex. Gray, Lauder, Berwickshire, and W. P. Martin, Edinburgh—equal; 15. A. J. D. Smith, Darlington.

CERTIFICATES OF MERIT.—16. Charles W. J. Wardrop, West Calder; 17. J. D. Gilruth, Auchmithie; 18. S. L. F. Maclauchlan, Edinburgh; 19. James Wood, Haddington; 20. Robert M. Moffat, London; 21. John Henderson, Morebattle; 22. William Darling, Edinburgh; 23. James Drever, Stromness; 24. A. Duncan Smith, Dundee; 25. Thomas Fraser, Nairnshire; 26. R. B. M. Blackstock, Kirkcaldy; 27. J. R. Murdoch, Edinburgh; 28. W. P. Lindsay, Lanarkshire; 29. A. G. T. Mackinnon, Canada; 30. William Swanney, Kirkwall; 31. Robert A. Lee, Edinburgh; 32. Alex. Innes, Campbeltown, Argyle; 33. Charles A. Gray, Montrose; 34. J. L. M. Watt, Dalkeith; 35. W. A. Skinner, Lauder, Berwickshire; 36. James Taylor, Kinross; 37. A. A. Foster, Edinburgh; 38. James Tolmie, Nairnshire.

LITERATURE PRIZE.—W. Robb. *Honourable Mention.*—1. Thomas Helme; 2. J. D. Gilruth; 3. Jas. Drever and George Macdougall —equal.

HISTORY PRIZES.—John Brown, Tayport, and William Kerr, Dundee —equal. *Honourable Mention.*—1. A. Maclennan; 2. J. R. Maxwell; 3. W. Robb; 4. Thomas Helme.

GRAMMAR PRIZES.—1. R. M. Moffat; 2. Wm. Crear, Thurso; 3. H. P. Baker, Edinburgh.

COMPOSITION PRIZES.—1. A. Bain; 2. W. Robb and R. Godfrey—equal.

The subject for Private Readings in the Senior Greek Class in the Winter Session, 1890-91, will be Aristophanes *Birds* (Merry's Edition, Clarendon Press, recommended).

S. H. BUTCHER, LL.D., *Professor.*

III.—MATHEMATICS.

JUNIOR CLASS.

PRIZES AND FIRST-CLASS CERTIFICATES.—1. James Wood, Edinburgh; 2. Robert Horn, Linlithgowshire (*Medallists*); 3. A. B. Macaulay, Ayrshire; 4. J. A. T. Robertson, Dumfries; 5. A. F. Lay, Roxburghshire; 6. G. L. Moffat, Edinburgh; 7. T. Grahame Bailey, Edinburgh; Robert Fairbairn, Edinburgh; Henry Hogg, Edinburgh, and P. C. Merrie, Lanark—equal; 11. D. N. C. Hogg, Fife, and Charles Mackie, Perth—equal.

SECOND-CLASS CERTIFICATES.—J. G. Anderson, Perthshire; T. C. Baillie, Peeblesshire; Herbert Booth, Yorkshire; James Burnet, Edinburgh; W. J. Couper, Mid-Lothian; T. M. Dey, Mid-Lothian; W. P. Fell, Perthshire; David Flett, Orkney; D. G. Hamilton, Kirkcudbright; Thomas Helme, Kirkcudbright; George Henderson, Forfarshire; John Henderson, Roxburgh; James Horne, Edinburgh; H. M. Lamont, Mid-Lothian; D. D. Lawson, Mid-Lothian; Angus Macdonald, Mid-Lothian; K. T. Mackenzie, Edinburgh; Robert Matthew, Forfarshire; John Middleton, Edinburgh; William Morison, Edinburgh; J. M. Rutherford, Dumfries; David Waterston, Forfarshire; William Watson, Kirkcudbright; John Welsh, Fife.

SENIOR CLASS.

PRIZES AND FIRST-CLASS CERTIFICATES.—1. W. E. Philip, Forfar; 2. J. Mitchell, Edinburgh (*Medallists*); 3. N. Macmichael, Argyleshire; 4. R. G. M'Kerron, Roxburgh; 5. R. Lees, Ayrshire; 6. E. M. Horsburgh, Scotland; 7. J. A. Christie, Fife; and J. R. Dick, Forfarshire—equal; 9. J. S. Cairncross, Edinburgh; 10. P. Campbell, Birmingham; 11. C. C. Goodlet, Gateshead; 12. A. Hay, Edinburgh; 13. D. Urquhart, Forfarshire.

SECOND-CLASS CERTIFICATES.—John T. Allan, Edinburgh; A. F. Annand, Aberdeenshire; Thomas Blyth, Fife; John Bowie, Edinburgh; John Davidson, Wigtownshire; Robert Fairbairn, Edinburgh; Thomas Finlay, Edinburgh; James Hood, Perthshire; Naughton Macnaughton, Perthshire; Thomas M'Vey, Mid-Lothian; David Maxwell, Forfarshire; Frank R. J. Pearson, Barrow-in-Furness; W. J. Pennell, Fifeshire; James Richardson, Roxburgh; James Smith, Caithness; William Wishart, Fife.

ADVANCED CLASS.

PRIZES AND FIRST-CLASS CERTIFICATES.—1. W. L. Thomson, Perth; 2. James Holm, Argyle (*Medallists*).

FIRST-CLASS CERTIFICATES.—*John Forbes, Ross; *A. C. Mackay, Sutherland.

SECOND-CLASS CERTIFICATES.—J. C. Beattie, Cumberland; P. F. Gillies, Mid Lothian; A. E. Goodwin, Hants; A. M. Hunter, Scotland; J. A. Norrie, Edinburgh; F. R. S. Walker, Perth.

* Attending for the second time, and therefore not eligible for prizes.

G. CHRYSTAL, LL.D., *Professor.*

IV.—LOGIC AND METAPHYSICS.

ADVANCED CLASS—METAPHYSICS.

PRIZEMEN.—1. (*Bruce of Grangehill and Falkland's Prize*) James Mitchell, Fifeshire (*Medallist*); 2. Andrew N. Bogle, Callander; 3. A. H. Gray, Edinburgh, and James Stewart, North Berwick—equal; 5. H. R. Brown, Argyleshire, and Walter Hardie, Edinburgh—equal.

JUNIOR CLASS—LOGIC AND PSYCHOLOGY.

PRIZES.—1. P. H. Hanson, Bradford; and H. R. Mackintosh, Rossshire—equal; 3. A. Hutcheson, Wigtownshire, and J. H. Murray, Aberdeen—equal (*Medallists*); 5. R. G. M'Kerron, Kelso, and Charles Edward Stuart, Edinburgh—equal; 7. A. Beith Macaulay, Irvine, and Thomas Marjoribanks, East Lothian—equal; 9. John Hunter, Edinburgh; Neil Macmichael, Argyleshire; John Ritchie, Edinburgh, and J. K. Wilkin, Dumfries—equal; 13. C. G. Goodlet, Gateshead; William Mill, Edinburgh; James Mitchell, Edinburgh, and W. J. Street, Edinburgh—equal; 17. T. B. M. Lamb, Cumberland, and Frank R. Pearson, Barrow-in-Furness—equal; 19. Robert Duff, Dumfriesshire; H. A. Jamieson, Campbeltown, and J. L. Munro, Ross-shire—equal.

SPECIAL PRIZE FOR AN ESSAY.—Purnananda Chatterji, Dacca, India.

CERTIFICATES OF DISTINCTION.—1. A. J. Campbell, Duns; A. K. Campbell, Montrose; D. S. Crichton, Barrow-in-Furness; J. Fleming, Dalkeith; A. Mackenzie, Dingwall, and M. M. F. Peterson, Shetland—equal; 7. J. Davidson, Wigtownshire; J. Romanes, Edinburgh, and J. Wilson, Fifeshire—equal; 10. C. Cooper, Arbroath; T. M. Dey, Edinburgh; J. E. Mackay, Caithness; J. A. Milroy, Wigtownshire; A. S. Morton, Trinidad; A. T. Ogilvie, Fifeshire, and A. Paton, Alloa—equal; 17. A. Cowan, Liberton; J. H. Dickie, Kinross-shire; J. Erskine Dods, East

Lothian; J. Forbes, Inverness; James Horne, Edinburgh; D. Maxwell, Forfarshire; C. P. Milne, Fifeshire, and J. A. T. Robertson, Dumfries—equal; 25. W. P. Chalmers, Arbroath; A. Duff, Dunkeld; G. Morton, Auchingray; W. Roy, Alloa, and J. Welsh, Fifeshire—equal.

A. CAMPBELL FRASER, D.C.L. and LL.D., *Professor.*

V.—MORAL PHILOSOPHY.

PRIZES.—1. Henry Barker, Edinburgh; 2. James Arthur S. Barrett, Edinburgh; 3. James F. Grant, Wick; 4. Alexander Hutcheson, Wigtownshire (*Medallists*); 5. John Anderson, Orkney; 6. John Hunter, Edinburgh; 7. William A. Neilson, Perthshire; 8. John M'Lennan, Ross-shire; 9. Ernest W. Hobbs, Brighton; 10. James L. Goodknight, Kentucky, U.S.A.; 11. Robert Dickson, Haddingtonshire; 12. John Forbes, Inverness; 13. Alexander Mackay, Wick; 14. James Wedderspoon, Inverness-shire, and Andrew Hamilton, Edinburgh—equal.

CERTIFICATES OF MERIT OF THE FIRST CLASS.—1. Robert Cochrane, Stirlingshire; 2. Ian R. Fraser, Blair-Athole; 3. W. G. Wedderspoon, Edinburgh; 4. P. Chatterji, Dacca, Bengal, India; 5. W. B. Heddle, Orkney; 6. Wm. Stoddart, Edinburgh; 7. John Brown, Tayport, Fife; Robert Burnett, Loanhead, and John Muirhead, East Lothian—equal; 10. William Walker, Edinburgh; 11. John Ritchie, Edinburgh; 12. Robert Gilmour, Kirkmadden; 13. James Henderson, Caithness; 14. J. S. Sinclair, Caithness, and Alex. Dunsmore, Stirling—equal; 16. J. W. Jackson, Dundee; Donald Cormack, Caithness, and John Black, Bathgate—equal.

STUDY OF KANT'S "ETHICS."—PRIZES.—1. Henry Barker, Edinburgh (*Medallist*); 2. James Grant, Wick; 3. James A. S. Barrett, Edinburgh; 4. Ian R. Fraser, Blair-Athole.

SPECIAL DISTINCTION.—1. J. W. Jackson, Dundee; 2. W. G. Wedderspoon, Edinburgh.

ADVANCED CLASS.

PRIZES.—1. John Davidson, Edinburgh (*Medallist*); 2. Walter C. Murray, Canada; 3. Andrew N. Bogle, Callander.

FIRST CLASS CERTIFICATES OF MERIT.—1. A. Herbert Gray, Edinburgh; 2. Henry Reynolds Brown, Dunoon; 3. Alexander Grieve, Smailholm.

SPECIAL DISTINCTION IN ESSAY.—James Mitchell, Edinburgh.

H. CALDERWOOD, LL.D., *Professor.*

VI.—NATURAL PHILOSOPHY.

ORDINARY CLASS—LOWER DIVISION.

PRIZES AND CERTIFICATES OF HONOUR.—1. J. R. Dick, Forfarshire; 2. J. Mitchell, Edinburgh; 3. R. Lees, Ayrshire (*Medallists*); 4. G. C. Nicholson, Northumberland; 5. R. A. Macfie, Cheshire; 6. W. E. Philip, Forfar; 7. A. M'Callum, Edinburgh, and W. L. Smith, Lancashire—equal; 9. Frank R. Pearson, Barrow-in-Furness; 10. E. M. Horsburgh, Scotland, and N. M'Michael, Argyleshire—equal; 12. A. J. Campbell, Berwickshire; 13. D. Maxwell, Forfar; 14. W. Sinclair, Mid-Lothian; 15. C. C. Goodlet, Gateshead; N. M'Naughton, Perthshire, and G. H. Stevenson, Stirling—equal; 18. W. Wishart, Fifeshire; 19. W. J. Pennell, Fifeshire.

UNIVERSITY CERTIFICATES.—20. J. Richardson, Roxburgh; 21. W. G. C. Geekie, Dumfriesshire; J. H. Pease, Durham, and H. Walker, Fife—equal; 24. J. E. Pickles, Yorks; 25. W. A. Stephen, Ayrshire, and R. Wilson, Mid-Lothian—equal; 27. J. K. Wilkin, Dumfriesshire; 28. F. Beddow, Derbyshire; 29. J. P. Hill, Fife; J. A. T. Robertson, Dumfries, and W. W. Taylor, Durham—equal; 32. L. S. L. Liddell, Edinburgh; 33. J. Bowie, Edinburgh; J. Middleton, Edinburgh; G. Stiell, Edinburgh, and D. Urquhart, Forfar—equal; 37. W. D. M'Dougal, Dumfries; 38. John Linton, Edinburgh, and J. A. Milroy, Wigtownshire—equal; 40. J. S. Cairncross, Edinburgh; J. A. M'Donald, Inverness; R. G. M'Kerron, Roxburghshire; F. Pickles, Yorks, and M. C. Wood, Orkney—equal; 45. D. Fergusson, Bridge of Allan; D. J. Graham, Lanarkshire, and A. S. Morton, West Indies—equal; 48. C. M'Donald, Edinburgh, and E. J. Raynes, Yorkshire—equal.

HIGHER DIVISION.

UNIVERSITY CERTIFICATE.—T. Holm.

FORTNIGHTLY EXAMINATIONS.—1. J. R. Dick and R. A. M'Fie (*Prizemen*)—equal; 3. A. J. Campbell, N. M'Naughton, J. Mitchell, and G. Nicholson—equal; 7. R. Lees, F. R. Pearson, W. Sinclair, J. K. Wilkin, and R. Wilson—equal; 12. J. G. Anderson, F. Beddow, W. G. C. Geekie, J. Hill, A. M'Callum, D. Maxwell, J. A. Milroy, J. H. Pease, J. Richardson, W. Smith, J. H. Stevenson, W. W. Taylor, and W. Wishart—equal.

ADVANCED CLASS.

PRIZES AND CERTIFICATES OF HONOUR.—1. J. Holm, Argyleshire; 2. J. Forbes, Ross (*Medallists*); 3. A. C. Mackay, Sutherlandshire, and T. B. Murray, Lanark—equal.

UNIVERSITY CERTIFICATE.—5. A. Ogilvie, Aberdeenshire, and A. Prentice, Lanark—equal.

PHYSICAL LABORATORY.

SUMMER SESSION 1889, AND WINTER 1889-90.

The following are highly commended :

Cant, Gillies, Graham, Greig, Holm, Jamieson, Middleton, Pease, Richardson, Smith (W. L.), Stephen, Stewart, Spence.

The Neil-Arnott Scholarship has been awarded to P. F. Gillies.

P. G. TAIT, M.A., *Professor.*

VII.—RHETORIC AND ENGLISH LITERATURE.

I.—CLASS PRIZES AND CERTIFICATES OF DISTINCTION.

PRIZES.—1. Wm. Blaikie Heddle, Orkney ; 2. Henry Barker, Edinburgh (*Medallists*) ; 3. Thomas M. Dey, Aberdeen ; 4. Andrew Hamilton, Edinburgh ; 5. John Anderson, Orkney ; 6. Philip N. Hanson, Bradford ; 7. John Maclennan, Ross-shire ; 8. John Ritchie, Edinburgh ; 9. Alex. Dunsmore, Stirling ; 10. Charles H. Orme, Forfarshire ; 11. Wm. G. Wedderspoon, Edinburgh ; 12. Wm. P. Chalmers, Arbroath ; 13. Robert Pollok, Leith, and Wm. A. Stephen, Ayrshire—equal ; 15. Robert Cochrane, Larbert ; 16. H. H. Murray, Brechin ; 17. Fred. Pickles, Yorkshire, and John Turner, Edinburgh—equal.

CERTIFICATES OF DISTINCTION.—1. Alexander Mackay, Wick ; 2. William Stoddart, Kelso ; 3. Robert Burnett, Lasswade ; 4. William Berry, Edinburgh, John MacIntyre, Greenock, and James Wedderspoon, Inverness-shire—equal ; 7. David B. Thompson, Roxburghshire ; 8. Maxwell Fleming, Perth ; 9. Robert Duff, Dumfriesshire ; 10. F. R. S. Walker, St Andrews ; 11. Alexander M'Tavish, Portobello ; 12. Thomas Linton, Edinburgh, and Wm. A. Neilson, Doune—equal ; 14. Wm. J. Street, Edinburgh ; 15. E. M. Horsburgh, Kelso ; 16. Wm. L. Thomson, Perth ; 17. K. J. M'Kenzie, Edinburgh, and James S. Sinclair, Wick—equal ; 19. James Henderson, Caithness, and John Welsh, Fife—equal ; 21. James Blair, Edinburgh, and Thomas Blyth, Kirkcaldy—equal.

II.—ESSAY PRIZES AND CERTIFICATES OF DISTINCTION.

PRIZES.—1. Andrew Hamilton, Edinburgh, and Philip H. Hanson, Bradford (*Medallists*)—equal ; 3. George T. B. Smith, Aberdeen ; 4. Wm. A. Neilson, Doune, and John Ritchie, Edinburgh—equal ; 6. Henry Barker, Edinburgh ; 7. Malcolm M'Innes, Skye ; 8. Alex. Dunsmore, Stirling ; 9. Thos. M. Dey, Aberdeen ; 10. Wm. Cruickshank, Aberdeen ; 11. John R. Currie, Ayr.

CERTIFICATES OF DISTINCTION.—1. Robert S. Craig, Hawick ; 2. Robert Duff, Dumfriesshire ; 3. E. W. Hobbs, Brighton ; 4. H. H. Murray, Brechin, and Wm. J. Street, Edinburgh—equal ; 6.

Wm. Baikie Heddle, Orkney; 7. John Anderson, Orkney; 8. Daniel Macintosh, Forres; 9. Thomas Jabez Thomas, Carmarthenshire; 10. John T. Macleay, Inverness; 11. Charles H. Orme, Forfarshire; 12. James A. Drysdale, Rochdale; 13. Ian R. Fraser, Blair Athole; John M'Intyre, Greenock, and James Wedderspoon, Inverness-shire—equal; 16. Donald L. Cameron, Edinburgh.

III.—FOR WORK IN OLD ENGLISH.

PRIZE.—Alex. M'Tavish, Portobello.

IV.—FOR POETICAL COMPOSITION.

PRIZES.—John R. Currie, Ayr; Donald L. Cameron, Edinburgh.

DAVID MASSON, LL.D., *Professor.*

VIII.—AGRICULTURE AND RURAL ECONOMY.

FIRST-CLASS CERTIFICATES.—1. Henry Ward Joyce, Burton-on-Trent; 2. Henry Crabtree, Lancashire (*Medallists*); 3. J. S. Gordon, Strabane; E. A. Fulton, Kendal, and James M'Kinnell Kilmartin, Lochgilphead—equal; 6. R. J. Irving, Carlisle; Alexander B. Stevens, Bridge of Earn, and Wm. George Rattray, Edinburgh—equal; 9. R. S. Cunliffe, Edinburgh; Chas. E. Gregor, Edinburgh, and T. Parker Greenwood, Skipton—equal; 12. John Murray, Laurencekirk; 13. John Brown, Airdrie, and Lawrence R. Wilson, Carlisle—equal; 15. T. J. Young, Hexham, and Andrew Urquhart, Alness—equal; 17. Duncan Munro, Isle of Luing, Argyllshire; 18. P. H. Foulkes, Abergeb; 19. T. Campbell Gilmour, Irvine; 20. E. W. Caddick, Edgebaston, and John Brown, Ayr—equal.

SECOND-CLASS CERTIFICATES.—22. James Macfie, Isle of Bute; 23. James Murdoch, Dumfries; 24. J. M. Arres, Edinburgh.

ESSAY ON FARMING IN THE LOTHIANS.—Wm. George Rattray and T. J. Young, equal—(*Medallists*). R. B. Greig, Chas. E. Gregor, and Jas. Macfie, very highly commended.

PRIZE EXAMINATIONS.—*Steven Scholarship of about* £75—H. Crabtree.

HIGHLAND AND AGRICULTURAL SOCIETY PRIZES.—£10, *to be spent on Books or Instruments*—E. A. Fulton, J. S. Gordon, R. J. Irving, H. Ward Joyce, and Alex. B. Stevens, equal—and receive books to the value of £2 each.

ROBERT WALLACE, *Professor.*

IX.—SANSKRIT AND COMPARATIVE PHILOLOGY.

SENIOR CLASS.

CLASS MEDAL.—James Elmsley Wood.

JUNIOR CLASS.

CLASS MEDAL AND MUIR PRIZE OF £5.—John Maclennan. MUIR PRIZE OF £3.—E. M. Macphail.

JULIUS EGGELING, Ph.D., *Professor.*

X.—ENGINEERING.

FIELD-WORK CLASS.

SUMMER SESSION, 1889.

FIRST-CLASS CERTIFICATES.—G. W. Herdman (*Medal*), A. Ogilvie.
SECOND-CLASS CERTIFICATES.—T. P. Greenwood, A. H. Inman, S. Carter.

ENGINEERING.

WINTER SESSION, 1889-90.

FIRST-CLASS CERTIFICATES.—1. J. R. Dick (*Medal and First Prize*); 2. G. C. Nicolson (*Second Prize*); 3. James Gray (*Third Prize*); 4. T. B. Murray; 5. W. M. Mackison.
SECOND-CLASS CERTIFICATES.—6. A. Prentice; 7. G. W. Herdman; 8. A. Ogilvie.

ENGINEERING DRAWING.

FIRST-CLASS CERTIFICATES.—1. G. C. Nicolson (*Medal*); 2. T. B. Murray (*Prize*); 3. G. H. Stevenson.
SECOND-CLASS CERTIFICATES.—4. A. Ogilvie; 5. W. M. Mackison.

G. F. ARMSTRONG, M.A., C.E., *Professor.*

XI.—GEOLOGY AND MINERALOGY.

STRUCTURAL AND FIELD GEOLOGY.

SUMMER SESSION, 1889.

MEDAL.—George S. Corstorphine, Edinburgh.
FIRST-CLASS CERTIFICATES.—1. George S. Corstorphine, Edinburgh; 2. Thos. S. Glover, Carlisle, and J. M. Lowson, Forfar—equal; 3. W. A. J. Alexander, East Lothian, and J. M. Cameron, Edinburgh—equal; 4. John King, Lanark; 5. D. A. Gilchrist, Bothwell; 6. Geo. W. Herdman, Edinburgh; 7. J. J. Jeffray, Dumfriesshire; 8. Robert Russell, Leven.
SECOND-CLASS CERTIFICATES.—9. John Bayne, Perthshire; 10. Alfred H. Inman, London, and C. J. Ross, New South Wales—equal; 11. W. S. Moodie, Lanarkshire, and Clement Nicolet, Belgium—equal; 12. W. D. Elder, Lanarkshire; 13. T. P. Greenwood, Yorkshire, and T. J. Young, Hexham—equal.

GEOLOGY.

WINTER SESSION, 1889-90.

CLASS MEDAL.—James Adamson, Edinburgh.
FIRST-CLASS CERTIFICATES.—James Adamson, Edinburgh; John T.

Morrison, Edinburgh; John King, Lanark; D. C. Hardie, Berwickshire; A. J. Marshall, Banff; J. J. Hewison, Edinburgh.

SECOND-CLASS CERTIFICATES.—D. A. Fullerton, Leith; G. T. Luxton, Edinburgh.

PRACTICAL GEOLOGY AND MINERALOGY.

CLASS MEDAL.—G. S. Corstorphine, Edinburgh.

FIRST-CLASS CERTIFICATES.—G. S. Corstorphine, Edinburgh; A. R. Wilson, Edinburgh.

SECOND-CLASS CERTIFICATES.—D. C. Hardie, Berwickshire; R. Cairns, Newcastle; James Adamson, Edinburgh; J. D. F. Gilchrist, Fife; G. R. Atkinson, Edinburgh.

JAMES GEIKIE, LL.D., D.C.L., *Professor.*

XII.—AGRICULTURAL ECONOMICS.

FIRST-CLASS HONOURS.—1. H. N. Joyce (*Medal and Prize*); 2. John Bayne (*Prize*); 3. T. A. Coward, R. J. Irving, and John Murray—equal; 6. T. P. Greenwood; 7. A. B. Stevens, E. A. Fulton, and J. K. Borland—equal.

SECOND-CLASS HONOURS.—10. J. S. Gordon and J. J. Young—equal; 12. P. H. Foulkes; 13. R. S. Cunliffe.

J. SHIELD NICHOLSON, D.Sc., *Professor.*

XIII.—THEORY, HISTORY, AND ART OF EDUCATION.

MEDAL AND FIRST-CLASS CERTIFICATE.—Wm. Gawler.

FIRST-CLASS CERTIFICATES.—Jas. Horne, J. E. Pickles, Tom Pickles, R. Blackstock—equal; T. Helme, R. Horn, H. Booth, P. C. Merrie, W. Morrison, J. G. Honeyman, W. A. Neilson, Henry Hogg, F. D. Westwater, J. W. Grant, Wm. Gow. C. Mackie, Jas. Graham, Donald Cormack, J. M. Milne, Alex. Duff, L. C. Scott.

S. S. LAURIE, LL.D., *Professor.*

XIV.—FINE ART.

CLASS PRIZE.—James Forbes and Duncan Mackenzie—equal.

COUSIN PRIZE.—Duncan Mackenzie.

G. BALDWIN BROWN, M.A., *Professor.*

XV.—CELTIC LANGUAGES AND LITERATURE.

MEDALS.—(*Second Year*)—Archibald S. Macintyre, B.A. (Lond.), Ardgour, and John R. Mackay, M.A., Strathy—equal. (*First Year*)—Alexander Connell, M.A., Appin, and Naughton M'Naughton, Comrie—equal.

SPECIAL PRIZES.—£10 *given by the Highland Society of London*, Archibald S. Mackintyre, B.A.; £5 *given by the Argyle, Bute, and Western Isles Association*, John R. Mackay, M.A.; £6, 6s. *given by the Gaelic Society of London*, Alexander Connell, M.A.; £4, 4s. *given by the Gaelic Society of London*, Naughton M'Naughton.

PRIZES PRESENTED BY JOHN MACKAY, ESQ., HEREFORD.—1. A. S. Macintyre, B.A.; 2 and 3. Alexander Connell, M.A., and John R. Mackay, M.A.—equal; 4. Naughton M'Naughton.

A Special Prize will be given in Session 1890-91 for the best Essay on the "Influence of the Norse Occupation on the Language and Literature of the Scottish Highlands." The Essay to be given in on or before December 31st, 1890.

DON. MACKINNON, M.A., *Professor.*

XVI.—FORESTRY.

FIRST-CLASS HONOURS.—1. L. R. Wilson (*Medallist*).

SECOND-CLASS HONOURS.—2. T. J. Young; 3. Robert Welsh; 4. James Huie.

WILLIAM SOMERVILLE, B.Sc., D. Œcon., *Lecturer.*

TUTORIAL CLASSES.

SUMMER SESSION, 1889.

I.—HUMANITY.

THIRD CLASS.

This Class met regularly, but no Competitive Examinations were held.

SENIOR CLASS.

PRIZES AND FIRST-CLASS CERTIFICATES OF MERIT.—1. James D. Slight, Portobello; 2. James Burnet, Edinburgh; 3. A. A. Wilson, Edinburgh; 4. Ronald T. Herdman, Edinburgh.

SECOND-CLASS CERTIFICATES OF MERIT.—5. William G. Manson, Edinburgh; 6. James S. Ponder, Edinburgh; 7. James M. Graham, Dunbar; 8. A. J. Louttit Laing, Edinburgh.

PRIZES FOR LATIN COMPOSITION.—1. James Burnet, Edinburgh; 2. Sydney Smith, Edinburgh.

HONOURABLE MENTION.—3. J. S. Ponder, Edinburgh; 4. W. G. Manson, Edinburgh.

JUNIOR CLASS.

PRIZE AND FIRST-CLASS CERTIFICATE OF MERIT.—Saville Middlemass, Edinburgh.

SECOND-CLASS CERTIFICATE OF MERIT.—George Nicol, Davidson's Mains.

FRANCIS R. JAMIESON, M.A.,
Assistant to the Professor of Humanity.

II.—GREEK.

SENIOR CLASS.

PRIZES AND FIRST-CLASS CERTIFICATES.—1. C. D. M'Intosh, Perthshire; 2. W. G. Manson, Edinburgh, and Sydney Smith, Edinburgh—equal; 4. A. A. Wilson, Edinburgh.

SECOND-CLASS CERTIFICATES. — 5. James Burnet, Edinburgh; Ronald Herdman, Edinburgh, and James D. Slight, Portobello—equal; 8. A. M. Fleming, Edinburgh; 9. W. Archibald Thomson, Edinburgh; 10. T. H. M'Laren, Edinburgh.

GREEK PROSE PRIZE.—C. D. M'Intosh.

HONOURABLE MENTION.—Sydney Smith; A. A. Wilson.

JUNIOR CLASS.

PRIZE AND FIRST-CLASS CERTIFICATE.—George Nicol, Davidson's Mains.

SECOND-CLASS CERTIFICATE.—Saville Middlemass, Edinburgh.

THIRD CLASS (ADVANCED).

No Competitive Examinations held.

A. DOUGLAS THOMSON, M.A.,
Assistant to the Professor of Greek.

III.—MATHEMATICS.

JUNIOR CLASS.

PRIZE.—1. Harry O. Dougal, Edinburgh.

SECOND-CLASS CERTIFICATES.—Robert Welsh, Edinburgh; J. B. Wilson, Edinburgh.

SENIOR CLASS.

PRIZES.—1. Robert Lees, Ayrshire; 2. William Wishart, Edinburgh; 3. W. J. Pennell, Edinburgh.

SECOND-CLASS CERTIFICATES.—David Maxwell, Arbroath; Robert Somerville, Edinburgh.

THIRD CLASS.

In this Class Lectures were given on Determinants, the Theory of Equations, and the Differential and Integral Calculus, but no Examinations were held.

R. E. ALLARDICE, M.A.,
Assistant to the Professor of Mathematics.

IV.—LOGIC AND METAPHYSICS.

JUNIOR CLASS—LOGIC AND PSYCHOLOGY.

FIRST-CLASS CERTIFICATES.—J. Fleming, Dalkeith; H. R. Macintosh, Ross-shire; T. Marjoribanks, Haddingtonshire; J. K. Wilkin, Dumfries.

SECOND-CLASS CERTIFICATES.—T. Henderson, Edinburgh; I. MacIntyre, Edinburgh; A. S. Morton, Trinidad, West Indies; J. A. Purves, Edinburgh.

SENIOR CLASS—METAPHYSICS.

No Examination was held in this Class.

R. P. HARDIE, M.A.,
Assistant to the Professor of Logic and Metaphysics.

V.—MORAL PHILOSOPHY.

JUNIOR CLASS.

PRIZES AND FIRST-CLASS CERTIFICATES.—Andrew Hamilton, Edinburgh; John Hunter, Edinburgh.

SECOND-CLASS CERTIFICATE.—James Fleming, Dalkeith.

SENIOR CLASS.

No Competitive Examinations held.

W. G. SMITH, M.A.,
Assistant to the Professor of Moral Philosophy.

VI.—NATURAL PHILOSOPHY.

JUNIOR CLASS.

FIRST-CLASS CERTIFICATES.—1. D. Maxwell and J. K. Wilkin—equal; 3. R. Lees.

SECOND-CLASS CERTIFICATES.—4. W. J. Pennell; 5. W. L. Smith; 6. W. K. Neil; 7. J. Middleton; 8. D. J. Graham.

ADVANCED CLASS.

Lectures were given on Dynamics of a Particle and the Theory of Attraction, but no Examinations were held.

W. PEDDIE, D.Sc.,
Assistant to the Professor of Natural Philosophy.

Examination Papers for Degrees in Arts.

EXAMINATION FOR CURRICULUM OF THREE SESSIONS AND FOR OPEN BURSARIES.

LATIN.

Saturday, 19th October 1889.—9 *to* 12 *o'clock.*

I. Translate into Latin prose: —

Examples have demonstrated to us, that in military affairs, and in all others of the like active nature, the study of sciences does more soften and untemper the courages of men, than any way fortify or incite them. I find Rome was more valiant before she grew so learned: and the most valiant nations at this time in being are the most ignorant: of which the Scythians and Parthians may serve for sufficient proof. When the Goths overran Greece, the only thing that preserved all the libraries from the fire, was that some one possessed them with an opinion that they were to leave this kind of furniture entire to the enemy, as being most proper to divert them from the exercise of arms, and to fix them to a lazy and sedentary life.

II. Translate into English:—

Legati ad consulem missi adhibito frequenti consilio auditi sunt. Pacem petiere, vectigal quantum Philippus pactus esset, daturum Persea Romanis pollicentes: urbibus, agris locisque, quibus Philippus cessisset, cessurum primum. Haec legati. Summotis his cum consultarent, Romana constantia vicit in consilio. Ita tum mos erat, in adversis voltum secundae fortunae gerere, moderari animo in secundis. Responderi placuit, ita pacem dari, si de summa rerum liberum senatui permittat rex de se deque universa Macedonia statuendi ius. Haec cum renuntiassent legati, miraculo ignaris moris pertinacia esse et plerique vetare amplius mentionem pacis facere: ultro mox quaesituros quod oblatum fastidiant. Perseus hanc ipsam superbiam, quippe ex fiducia virium esse, timere; et summam pecuniae augens, si pretio pacem emere posset, non destitit animum consulis temptare. Postquam nihil ex eo quod primo responderat mutabat, desperata pace ad Sucurium, unde profectus erat rediit, belli casum de integro temptaturus.

III. [*To be done by Candidates for Bursaries only.*]

Sunt dis inter se commercia. Flectere tempta
Caesareum numen numine, Bacche, tuo!
Vos quoque, consortes studii, pia turba, poetae,
Haec eadem sumpto quisque rogate mero!

Atque aliquis vestrum, Nasonis nomine dicto,
Deponat lacrimis pocula mixta suis,
Admonitusque mei, cum circumspexerit omnes,
Dicat "Ubi est nostri pars modo Naso chori?"
Idque ita, si vestrum merui candore favorem,
Nullaque iudicio littera laesa meo est;
Si veterum digne veneror cum scripta virorum,
Proxima non illis esse minora reor.
Sic igitur dextro faciatis Apolline carmen,
Quod licet, inter vos nomen habete meum!

Scan the first four lines.

GREEK.

Saturday, 19th October 1889.—1 *to* 4 *o'clock.*

I. Translate:—

ΚΡΟΝΟΣ ΤΟΙΣ ΠΛΟΥΣΙΟΙΣ ΧΑΙΡΕΙΝ.

[*The poor had written to Cronos complaining of the unequal distribution of the good things of life. Cronos here informs the rich of the contents of the letter and of his reply.*]

(1.) Οἱ πένητες ἔναγχος ἐπεστάλκασί μοι αἰτιώμενοι ὑμᾶς μὴ μεταδιδόναι σφίσιν ὧν ἔχετε, καὶ τὸ μὲν ὅλον ἠξίουν με κοινὰ πᾶσι ποιεῖν τἀγαθὰ καὶ τὸ μέρος ἕκαστον αὐτῶν ἔχειν· δίκαιον γὰρ εἶναι ἰσοτιμίαν καθεστηκέναι καὶ μὴ τῷ μὲν πλέον, τῷ δὲ μηδ' ὅλως μετεῖναι τῶν ἡδέων. ἐγὼ δὲ περὶ μὲν τούτων ἔφην ἄμεινον σκέψασθαι τὸν Δία, περὶ δὲ τῶν παρόντων καὶ ὧν ἀδικεῖσθαι ᾤοντο κατὰ τὴν ἑορτὴν ἑώρων ἐπ' ἐμὲ καθήκουσαν τὴν κρίσιν, καὶ ὑπεσχόμην γράψειν πρὸς ὑμᾶς. ἔστι δὲ ἅπερ ἀξιοῦσι ταῦτα μέτρια, ὡς ἐμοὶ ἔδοξε. πῶς γάρ, φασί, ῥιγοῦντες τοσοῦτῳ κρύει καὶ λιμῷ ἐχόμενοι προσέτι ἑορτάζοιμεν ἄν; εἰ τοίνυν ἐθέλοιμι κἀκείνους μετέχειν τῆς ἑορτῆς, ἐκέλευόν με ἀναγκάσαι ὑμᾶς ἐσθήτων τε ὧν ἔχετε μεταδοῦναι αὐτοῖς, εἵ τινες περιτταὶ καὶ παχύτεραι ἢ καθ' ὑμᾶς, καὶ τοῦ χρυσίου ὀλίγον ἐπισταλάξαι αὐτοῖς.

ἐπισταλάζω, lit. "let drops fall."

(2.) Ἔνθα δύω νύκτας δύο τ' ἤματα κύματι πηγῷ
πλάζετο, πολλὰ δέ οἱ κραδίη προτιόσσετ' ὀλέθρον.
ἀλλ' ὅτε δὴ τρίτον ἦμαρ ἐϋπλόκαμος τέλεσ' Ἠώς,
καὶ τότ' ἔπειτ' ἄνεμος μὲν ἐπαύσατο ἠδὲ γαλήνη
ἔπλετο νηνεμίη, ὁ δ' ἄρα σχεδὸν εἴσιδε γαῖαν
ὀξὺ μάλα προϊδών, μεγάλου ὑπὸ κύματος ἀρθείς.
ὡς δ' ὅτ' ἂν ἀσπάσιος βίοτος παίδεσσι φανήῃ
πατρὸς, ὃς ἐν νούσῳ κῆται κρατέρ' ἄλγεα πάσχων,
δηρὸν τηκόμενος, στυγερὸς δέ οἱ ἔχραε δαίμων,
ἀσπάσιον δ' ἄρα τόνγε θεοὶ κακότητος ἔλυσαν,

ὣς Ὀδυσῆ' ἀσπαστὸν ἐείσατο γαῖα καὶ ὕλη,
νῆχε δ' ἐπειγομενος ποσὶν ἠπείρου ἐπιβῆναι.

II. Give the chief tenses of—*ἐσθίω, ἀφίημι, κάμνω, ὀφείλω, φέρω, ὄμνυμι, αἴρω, δάκνω, ἀκούω, ὀνίνημι.*

Parse—*καθεστῶτα, περιῤῥνέντα, ἀνέῳγον, πιθοῦ, πέπλεχθε, ἐάλω, ὤφελε, ὑπέσχου, φανεῖεν, εἶξασι.*

Give the stem, gen. sing., accus. sing., and dative plural of—*πατρίς, πλῆθος, λέων, λεώς, νέως, ναῦς, Ἑρμῆς, δόρυ, κέρδος, φονεύς.*

Parse—*ὅτῳ, οἷ, λαλίστερος, πλέᾳ, ὦτα, υἱέοιν, ὑγιᾶ.*

Translate into Greek :—

(1.) He feared that the enemy might depart unobserved.

(2.) You have a right to expect that those in your house will be on your side.

(3.) He did more good to the country than any other one man.

(4.) So long as you are here everything will be well.

(5.) We did not know what we were doing but did whatever we were bid.

For Bursaries only.

III. (1.) For Greek Prose :—

I enlarged upon many other topics, which the natural desire of endless life and sublunary happiness could easily furnish me with. When I had ended, and the sum of my discourse had been interpreted (*ἑρμηνεύω*) as before to the rest of the company, there was a great deal of talk among them in the language of the country, not without some laughter at my expense. At last the same gentleman who had been my interpreter said he was desired by the rest to set me right in a few mistakes which I had fallen into through the common imbecility of human nature, and upon that allowance was less answerable for them.

(2.) Translate :—

[*Orestes and Pylades are prisoners before Iphigeneia, who is priestess of the Tauric Artemis. She not knowing Orestes offers to save him if he will carry home a letter for her to Argos.*]

ΙΦ. *σὺ δ', εἶ γάρ, ὡς ἔοικας, οὔτε δυσγενὴς*
καὶ τὰς Μυκήνας οἶσθα χοὖς κἀγὼ θέλω,
πείσθητι καὶ σὺ, μισθὸν, οὐκ αἰσχρὸν λαβὼν
κούφων ἔκατι γραμμάτων σωτηρίαν.
οὗτος δ', ἐπείπερ πόλις ἀναγκάζει τάδε,
θεᾷ γενέσθω θῦμα χωρισθεὶς σέθεν.

ΟΡ. *καλῶς ἔλεξας πάλλα πλὴν ἓν, ὦ ξένη·*
τὸ γὰρ σφαγῆναι τόνδ' ἐμοὶ βάρος μέγα.
ὁ ναυστολῶν γάρ εἰμ' ἐγὼ τὰς συμφορὰς·
οὗτος δὲ συμπλεῖ τῶν ἐμῶν μόχθων χάριν.
οὔκουν δίκαιον ἐπ' ὀλέθρῳ τῷ τοῦδ' ἐμὲ
χάριν τίθεσθαι καὐτὸν ἐκδῦναι κακῶν.

ἀλλ' ὣς γενέσθω· τῷδε μὲν δέλτον δίδου·
πέμψει γὰρ Ἄργος, ὥστε σοι καλῶς ἔχειν·
ἡμᾶς δ' ὁ χρήζων κτεινέτω.

MATHEMATICS.

Monday, 21st October 1889.—9 *to* 12 *o'clock.*

1. Any two sides of a triangle are together greater than the third.

Show that any two sides of a triangle are together greater than twice the corresponding median; and that the sum of the three perpendiculars from the vertices of any triangle upon the opposite sides is less than the perimeter.

2. The diagonals of a parallelogram bisect each other, and, if they are equal, the parallelogram is a rectangle.

$ABCD$ is a quadrilateral; E the intersection of its diagonals; P, Q, R, S the centroids of the triangles EAB, EBC, ECD, DEA. Show that $PQRS$ is a parallelogram; and find the ratio of its area to the area of $ABCD$.

3. The sum of the squares on the sides of a triangle is double the sum of the squares on the median and on half the base.

ABC is a triangle; $CADE$ and $BAFG$ squares described externally on the sides CA and BA; show that

$$DF^2 = 2AB^2 + 2AC^2 - BC^2.$$

4. State and prove the proposition which enables us to construct a square whose area is equal to the area of a given rectangle.

How can this construction be used to find roughly the square root of any number by means of a pair of compasses and a graduated rule?

$ABCD$ is a quadrilateral, in which the angles B and C are right angles. If the lengths of BA, AD, DC, be 5, 6, and 7 feet respectively, calculate the area of $ABCD$ to three places of decimals.

5. The angle subtended by any arc of a circle at the circumference is half that subtended by the same arc at the centre; and all the angles subtended at the circumference by the same arc are equal.

Deduce from this the complete locus of a point at which a given limited straight line subtends a given angle.

P is a given point; L a given straight line. Show how to place upon L a given limited straight line AB so that AB shall subtend a given angle at P.

6. To construct a circle which shall pass through two given points and touch a given circle.

A, B, C are three given points; to find a point P so that AP and BP shall each exceed CP by a given length.

7. How many conditions are required to determine the shape (apart from the size) of a triangle?

If two triangles have one angle of the one equal to one angle of

the other, and also the sides about these angles proportional, they are similar.

A triangle ABC moves so that its sides, BC, CA, AB are always parallel to three given straight lines L, M, N, respectively; and so that its vertices B and C always lie on two given straight lines; find the locus of A.

8. Explain how the theory of loci is applied to the construction of a point in a plane.

Solve the following problem by loci or otherwise. To construct an equilateral triangle so that one of its vertices may be at a given point on one side of a given square, and the other two vertices on the two adjacent sides of the square.

9. Explain what is meant by the *degree of an integral function.*

Determine p, q, r, s so that the following identity may subsist

$$\frac{x^4+px^3+qx^2+rx+s}{(x-1)^2} \equiv x^2+x+1.$$

Simplify and arrange in a symmetric form

$$\left(\frac{y^3-z^3}{y-z}\right)^2+\left(\frac{z^3-x^3}{z-x}\right)^2+\left(\frac{x^3-y^3}{x-y}\right)^2.$$

10. Show that every quadratic function of x can be resolved into two factors of the first degree; and state the condition that these factors be real.

Factorise the following

(α) $4x^2+12x+4$;

(β) $x^3+2(p-1)x^2+(p^2-q^2-4p)x-2(p^2-q^2)$;

(γ) $xy-3y+5x-15$.

11. Express as a single fraction at its lowest terms

(α) $$\left(\frac{2x}{1+2x}+\frac{1-2x}{2x}\right)\div\left(\frac{2x}{1+2x}-\frac{1-2x}{2x}\right);$$

(β) $$\frac{b-c+a}{x(x-b)(x-c)}+\frac{c-a+b}{x(x-c)(x-a)}+\frac{a-b+c}{x(x-a)(x-b)}-\frac{a+b+c}{(x-a)(x-b)(x-c)}.$$

12. Assuming that $x^{p/q}$ means the real positive value of the qth root of x^p, x being a real positive quantity, prove that $x^{p/q}\times x^{r/s}=x^{p/q+r/s}$, where p, q, r, s are all positive integers.

Express each of the following as a sum of simple surds

(α) $(3+2\sqrt{2})^{3/2}+(6-4\sqrt{2})^{3/2}$;

(β) $1/(\sqrt{2}+\sqrt[3]{3})$.

13. Find the condition that the three equations $ax+by+c=0$, $a'x+b'y+c'=0$, $a''x+b''y+c''=0$ may have a common solution.

Solve the following

(α) $\dfrac{x}{b-c+x}+\dfrac{x}{c-a+x}+\dfrac{x}{a-b+x}=3$;

(β) $\frac{1}{3}x-\frac{1}{4}y+\frac{1}{5}z=\frac{1}{2}\frac{1}{0}$, $\frac{1}{2}x-\frac{1}{3}y+\frac{1}{4}z=\frac{1}{4}x+\frac{1}{3}y+\frac{1}{6}z=1\frac{1}{2}$.

14. Solve *completely* the following equations

(α) $(x^2-x)^2-3(2x^2-x)^2=0$;

(β) $1/\{\sqrt{(2x-3)}-\sqrt{3}\}+1/\{\sqrt{(2x-3)}+\sqrt{3}\}=2\sqrt{(2x-3)}$.

15. Show how to find successively the sums of the 1st, 2nd, and 3rd powers of 1, 2, 3, . . . , n.

Sum the series

$$a^2-(a+b)^2+(a+2b)^2-\ \ldots\ +(a+2nb)^2.$$

A Pyramid is built in square courses or layers, of equal cubical blocks of stone. The apex consists of a single block; the next course is a square on the side of which there are three blocks; the next a square on the side of which there are five blocks; and so on. If there be n courses on the pyramid, find the whole number of blocks in it.

16. Assuming the formulae for the expansion of $\sin(A\pm B)$ and $\cos(A\pm B)$ in terms of $\sin A$, $\sin B$, &c., deduce the following

$$\sin A-\sin B=2\sin\tfrac{1}{2}(A-B)\cos\tfrac{1}{2}(A+B);$$

$$\sin A+\sin B+\sin C-\sin(A+B+C)$$
$$=4\sin\tfrac{1}{2}(B+C)\sin\tfrac{1}{2}(C+A)\sin\tfrac{1}{2}(A+B).$$

Show that

$$\frac{\cos(A-B)+\cos(A+B)+\sin 2A}{\cos(A-B)-\cos(A+B)-\sin 2A}=-\cot A\cot\{\tfrac{1}{4}\pi-\tfrac{1}{2}(A+B)\}.$$

17. Investigate logarithmic formulae for calculating the sides and the area of a triangle when its altitude and its two base-angles are given.

The perpendiculars from the vertices of a triangle ABC meet the circumscribing circle in A', B', C' respectively: Calculate the sides and angles of $A'B'C'$ in terms of the sides of ABC.

ENGLISH GRAMMAR AND COMPOSITION.

FIRST PAPER.

Monday, 21st October 1889.—1 *to* 2 *o'clock.*

Write an essay on *either* of the following subjects, attending to expression and pointing, as well as to matter:—

1. War.
2. Novel-reading.

SECOND PAPER.

Monday, 21st October 1889.—2 *to* 4 *o'clock.*

1. Give a general grammatical analysis of the following passage, and parse the words in Italics :—

" Oh ! that torment *should* not be confined
To the body's wounds and sores,
With maladies innumerable
In heart, head, breast, and reins,
But *must* secret passage find
To the *inmost* mind,
There exercise all *his* fierce accidents,
And on *her* purest spirits prey ! "

2. Explain as many as you can of the following terms of English Grammar, giving examples :—*Elementary Sounds, Redundant Letters in the Alphabet, Scandinavian Words, Hybrids, Greek Prefixes, Parts of Speech, Abstract Nouns, Relative Pronouns, Irregular Comparison, Inflection for Gender, Anomalous Verbs, Inversion.*

3. Give the derivations of any twelve of the following words :—*Assassin, auction, blaspheme, bombast, cant, carnation, clever, demure, drake, electricity, farthing, firmament, goblin, grocer, horizon, interest, king, knight, laity, laundress, marquis, monk, nice, parson, parish, pessimist, quintessence, rascal, reticule, sexton, solecism, spice, tautology, Teutonic, utopian, vow, welkin, window, zodiac.*

4. Express, in your own words, the *meanings* of the following passages ; and comment on anything that seems to you peculiar in the language of the second :

(1) " Heraclitus saith well, in one of his enigmas, *Dry light is ever the best.* And certain it is that the light that a man receiveth by counsel from another is drier and purer than that which cometh from his own understanding and judgment, which is ever infused and drenched in his affections and customs."

(2) " Divide with reason between self-love and society ; and be so true to thyself as thou be not false to others. It is a poor centre of a man's actions, *himself.* It is right earth. For that only stands fast upon his own centre ; whereas all things that have affinity with the heavens move upon the centre of another, which they benefit."

5. Translate the following passage, line for line, into modern English ; explain the principle of the versification by reference specially to the first three lines; and point out peculiarities of grammar in the lines marked with an asterisk :—

" And, as I wente be the waie, wepynge for sorowe,
I seigh a sely man me by opon the plow hongen.
His cote was of a cloute that *cary* was y-called ;
His hod was full of holes, and his heer oute ;

With his knopped schon clouted full thykke,
*His ton toteden out as he the londe treddede ;
His hosen overhongen his hokschynes on everiche a side,
Al beslombred in fen, as he the plow folwede ;
Twey myteynes as mete maad all of cloutes ;
The fyngers weren for-werd, and ful of fen honged.
This whit waselede in the fen almost to the ancle,
*Foure rotheren hym by-forn that feble were worthen."

6. Correct the following passage of bad English ; and point out the nature of the errors :—

" Passing through one of the streets of this city, so different to the aspects of other cities, a group of students are seen, and, looking beyond them, an old book-shop. Edinburgh holds a unique position for her second-hand book-stalls ; and perhaps the associations which cluster round her ancient fame make it doubly so. These old book-stalls have been visited by such magnets in the literary firmament as Burns and Scott. But the present system of bookselling in the town is not what it used to be."

7. The first seven of the following are lines from English poems ; and No. (8) is a piece of blank verse printed as prose. Name or describe the metres of the first seven ; and arrange No. (8) in its proper form of blank verse, without changing a word or the order of the words :—

(1) " Love will never bear enslaving."
(2) " The crowded hall or lonely bower."
(3) " We may roam through this world like a child at a feast."
(4) " And left without a sigh the land of war and crimes."
(5) " Surely the soul of the hero rejoices."
(6) " Was aught ever heard like his fiddle and him ? "
(7) " Such a one do I remember, whom to look at was to love."
(8) " The old man is flush of dollars : this I caused him tell among his comrades, who became as eager to have him in their company as ever they had been glad to part with him : in brief, a letter has been framed requesting him to hasten to this mansion instantly on business of importance."

GEORGE HERIOT BURSARIES.

PURE GEOMETRY.

Tuesday, 22nd October 1889.—9 *to* 12 *o'clock.*

1. Find the locus of a point the ratio of whose distances from two fixed points is constant.

What does the locus become when this constant ratio is unity?

To find a point P in the plane of a triangle ABC, such that $PA : PB : PC = l : m : n$, where l, m, n are lines of given lengths.

2. A and B are two fixed circles; a circle whose centre is C passes through the centre of B and touches the circle A in a moveable point P. If BP meets the circle A again in D, and CB meets the circle B in E, show that DE passes through a fixed point.

3. Four circles, and only four, can be drawn to touch each of three straight lines forming a triangle.

If the inscribed and first escribed circles of a triangle ABC touch BC in D and D', show that $BD = CD'$ and $DD' = AB \sim AC$.

Given one side of a triangle (in position but not in magnitude), and the centres of the inscribed and first escribed circles, to construct the triangle.

4. The feet of the perpendiculars on the sides of a triangle ABC from any point P on the circumcircle are collinear.

If P is at the middle point of the arc AC, and PD and PF are the perpendiculars on BC and BA, show that $CD = AF$.

5. Define the *radical axis* of a pair of circles, and prove its fundamental property.

The three radical axes of three circles taken in pairs are concurrent.

Given two points P and Q; find the locus of the centre of a circle the tangents to which from P and Q shall be equal to two given straight lines.

6. Define the anharmonic ratio (cross ratio) of four collinear points.

When are the four points said to form a harmonic range?

If C and D be harmonic conjugates with respect to A and B the circles described on AB and CD as diameters intersect orthogonally.

7. Define the polar of a point with reference to a circle, and prove ts fundamental property.

If A is a point on the polar of B, B is a point on the polar of A.

Show how to construct a triangle which shall be self-conjugate with reference to a given circle.

8. Define the inverse of a given curve, and show that the inverse of a circle is in general another circle.

Invert the proposition that the opposite angles (A and C) of a cyclic quadrilateral are supplementary, taking the point A as centre of inversion.

9. Find the locus of the foot of the perpendicular from the focus of a parabola on a variable tangent.

To construct a parabola when the focus, the direction of the axis, and a tangent are given.

10. If the tangent at a point P on an ellipse meet the axis in T, and if N be the foot of the ordinate of the point P, show that $CT \cdot CN = CA^2$.

If the normal at P meet the axis in G, show that $CG = e^2 CN$.

11. If two straight lines in space are met by three parallel planes, they are divided proportionally.

Show that through any given point in space a straight line may be drawn to intersect two given straight lines in space.

12. Find the volume and the area of a segment of a right circular cone, in which the altitude is h, and the radius of the base r.

Find the relation between the height and the radius of the base, when the curved surface is equal to the area of the base.

EXAMINATION PAPERS FOR DEGREE OF M.A. IN 1889-90.

PASS EXAMINATION.

A.—DEPARTMENT OF CLASSICAL LITERATURE.

LATIN.

Tuesday, 15*th October* 1889.—9 *to* 11 *o'clock.*

I. Translate into Latin :—

Tell me by the way (if you ever had any speculations on the subject) what is it you suppose Homer to have meant in particular, when he ascribed his blindness to the muse ; for that he speaks of himself under the name of Demodocus in the eighth book, I believe, is by all admitted. How could the old bard study himself blind, when books were either so few, or none at all ? And did he write his poems ? If neither were the cause, as seems reasonable to imagine, how could he incur his blindness by such means as could be justly imputable to the muse? Would mere thinking blind him ? I want to know : " Call up some spirit from the vasty deep ! "

II. Translate into English :—

Themistocles post victoriam eius belli, quod cum Persis fuit, dixit in contione se habere consilium rei publicae salutare, sed id sciri non opus esse : postulavit ut aliquem populus daret, quicum communicaret ; datus est Aristides. Huic ille, classem Lacedaemoniorum, quae subducta esset ad Gytheum, clam incendi posse, quo facto frangi Lacedaemoniorum opes necesse esset. Quod Aristides cum audisset, in contionem magna exspectatione venit dixitque perutile esse consilium, quod Themistocles adferret, sed minime honestum. Itaque Athenienses, quod honestum non esset, id ne utile quidem putaverunt totamque eam rem, quam ne audierant quidem, auctore Aristide repudiaverunt. Melius hi quam nos, qui piratas inmunes, socios vectigales habemus.

Tuesday, 15*th October* 1889.—11.30 *to* 1.30 *o'clock.*

I. Translate :—

(1) Horace, *Odes*, iii. 23, *from* " Caelo supinas si tuleris manus," *to* " Farre pio et saliente mica."

(2) Virgil, *Georg.*, ii. 73-82, *from* "Nec modus inserere," *to* "non sua poma."

(3) Cicero, *Pro Sestio*, xlv. 97, *from* "Quis ergo iste optimus quisque?" *to* "bene de rebus domesticis constituti."

(4) Tacitus, *Annals*, xiii. 38, *from* "Placitum dehinc," *to* "coram dissertaturos, respondit."

II. Translate *five* of the following, with short notes on the words italicized :—

(1) Quin et Prometheus et *Pelopis parens*
Dulci *laborem* decipitur sono. [*al.* laborum.]

(2) Haec ego procurare et idoneus *imperor* et non
Invitus, ne turpe toral, ne sordida mappa
Corruget nares.

(3) Haec tibi *dictabam* post fanum putre *Vacunae*,
Excepto quod non simul esses cetera laetus.

(4) Dic quibus in terris inscripti *nomina* regum
Nascantur *flores*, et Phyllida solus habeto.

(5) *Ut vidi, ut perii!* ut me malus abstulit error !
Incipe *Maenalios* mecum, mea tibia, versus.

(6) Nec fuit indignum superis, *bis* sanguine nostro
Emathiam et latos Haemi pinguescere campos.

(7) *Isdemque consulibus* sedentibus atque inspectantibus lata lex est ne quis *obnuntiaret*, ut *lex Aelia*, *lex Fufia* ne valeret.

(8) Quos *vindicta* patronus non liberaverit, velut vinclo servitutis attineri.

III. Answer any *three* of the following questions :—

(1) What metre has Horace employed in the Ode quoted in Question 1? Scan the first verse.

(2) What was Virgil's purpose in writing the Georgics?

(3) Compare modern forensic oratory with the forensic oratory of Rome, as exemplified in the *Pro Sestio*.

(4) Distinguish carefully between (*a*) the *legal* and (*b*) the *political* questions involved in the banishment of Cicero.

(5) Sketch briefly the career and character of Corbulo.

(6) Show clearly, by means of a table or otherwise, the relationship between Augustus and each of his successors down to and including Nero.

Monday, 7th April 1890.—9 *to* 11 *o'clock.*

I. Translate *one* of the following passages into Latin :—

1. After the surrender of Segni, Alva effected a junction with the Italian forces, and marched to the town of Colona, in the Campagna, where for the present he quartered his army. Here he formed the plan of an enterprise, the adventurous character of which it seems difficult to reconcile with his habitual caution. This was a night assault on Rome.

He did not communicate his whole purpose to his officers, but simply ordered them to prepare to march on the following night, the 26th of August, against a neighbouring city, the name of which he did not disclose. It was a wealthy place, he said, but he was most anxious that no violence should be offered to the inhabitants, in either their persons or their property. The soldiers should be forbidden even to enter the dwellings; but he promised that the loss of booty should be compensated by increase of pay.

2. I find Paris tolerable, and that is all. There appears to be something rotten in the state of this country; the system stands on unstable foundations, the people are demoralised; in vain we look for fixed principles or deep convictions. Some are indifferent to the fate of the monarchy because they hate the monarch, others rejoice at attempts on the monarch from aversion to monarchy, and as far as my cursory observation and casual observation instruct me, I see only a confusion and caprice of passions, prejudices, and opinions, which are only reduced to anything like order by the strong, sober sense and the firmness of the king, who is by far the ablest man among them.

II. Translate :—

Ubi dies quae dicta erat advenit, arma equosque ostenderunt. Tum Scipio renuntiari sibi dixit, quosdam equites Siculorum tamquam gravem et duram horrere eam militiam. Si qui ita animati essent, malle eos sibi iam tum fateri quam postmodo querentes segnes atque inutiles milites reipublicae esse: expromerent, quid sentirent; cum bona venia se auditurum. Ubi ex iis unus ausus est dicere, se prorsus, si sibi utrum velit liberum esset, nolle militare, tum Scipio ei, "quoniam igitur, adulescens, quid sentires non dissimulasti, vicarium tibi expediam, cui tu arma equumque et cetera instrumenta militiae tradas, et tecum hinc extemplo domum ducas, exerceas, docendum cures equo armisque." Laeto condicionem accipienti unum ex trecentis, quos inermes habebat, tradit.

Monday, 7th April 1890.—11.30 *to* 1.30 *o'clock.*

I. Translate :—

(1) Horace, *Epistles*, i. 6, 56-64, *from* "Si bene qui cœnat," *to* "interdicta voluptas."

(2) Virgil, *Georgics*, i. 393-403, *from* "Nec minus ex imbri," *to* "exercet noctua cantus."

(3) Cicero, *Pro Sestio*, xxix. 63, *from* "Atque etiam hoc videbat," *to* "dolorem ille animi non minorem."

(4) Tacitus, *Annals*, xiii. 23, *from* "Deferuntur dehinc," *to* "nomina retrahebat."

II. Translate *five* of the following, with short notes on the words italicised :—

(1) Vivet extento *Proculeius* aevo,
Notus in fratres *animi* paterni :
Illum aget penna metuente solvi
Fama superstes.

(2) I, pete unguentum, puer, et coronas
Et cadum *Marsi* memorem *duelli*,
Spartacum si qua potuit vagantem
Fallere testa.

(3) Nunc *oblita* mihi tot carmina ; vox quoque Moerim
Iam fugit ipsa ; *lupi Moerim videre priores.*

(4) An memorem portus *Lucrinoque addita claustra*
Atque indignatum magnis stridoribus aequor ?

(5) Ipse dies agitat festos, fususque per herbam
Ignis ubi in medio et *socii cratera coronant*,
Te, libans, Lenaee, vocat.

(6) Caedem vero tantam, tantos acervos corporum exstructos, nisi forte *illo Cinnano atque Octaviano die*, quis unquam in foro vidit ?

(7) Ferebaturque degrediente eo magna prosequentium multitudine non absurde dixisse ire Pallantem ut *ejuraret.*

(8) Manet tamen *abolitio quadragesimae quinquagesimæque*, et quae alia exactionibus illicitis nomina publicani invenerant.

III. Answer any *three* of the following questions :—

(1) Give some account of Maecenas and his relations with the poets of the Augustan Age.

(2) "The history of pastoral poetry shows how easily the most simple form of composition may pass into the most artificial." Explain this statement.

(3) Give a brief account of the life and writings of Tacitus.

(4) State the main charges brought against Sestius, and explain the line of Cicero's defence.

(5) Tacitus says : "Manebat nihilominus quaedam imago reipublicae" (*Annals*, xiii. 28). How far was this true of the reign of Nero ?

(6) Who were—Narcissus, Gallus, Milo, Thrasea, Gabinius ?

GREEK.

Wednesday, 16*th October* 1889.—11.30 *to* 1.30 *o'clock.*

I. (1) Translate :—

Homer, *Iliad*, xviii. 207-218, *from* "ὡς δ' ὅτε καπνὸς ἰὼν," *to* "Τρώεσσιν ἐν ἄσπετον ὦρσε κυδοιμόν."

Scan the last line.

It has been proposed to read οἱ δὲ for οἵτε in the third line. How would this alter the sense ?

(2) Translate and explain :—

κεῖτο δ' ἄρ' ἐν μέσσοισι δύω χρυσοῖο τάλαντα,
τῷ δόμεν ὃς μετὰ τοῖσι δίκην ἰθύντατα εἴποι.

(3) Write brief notes on the meaning of the following words in Homer :—*στεῦτο, μέροπες, ἐννέωρος, τρίπολον, τέμενος, ἀλφεσίβοιαι.*

II. (1) Translate :—

Euripides, *Hercules Furens*, ll. 1109-1120, *from* "ΑΜ. *γέροντες, ἔλθω,*" *to* "ΗΡ. *ὕποπτον ἠνίξω πάλιν.*"

Scan the line *εἶπ' εἴ τι καινὸν κ.τ.λ.*

(2) Translate with brief notes :—

Eurip., *Herc. Fur.*, 656-662, *from* "*εἰ δὲ θεοῖς ἦν,*" *to* "*ἂν ἔβαν διαύλους.*"

III. (1) Translate :—

Thucydides, vii. 18. 2, *from* "*Ἀθηναίους γὰρ ἐς τὴν χώραν τήνδε,*' *to* "*ὃ νῦν Ἀθηναῖους εἰκὸς πεπονθέναι.*"

(2) Translate and explain :—

καὶ διὰ τοῦτο εἰκότως δυστυχεῖν τε ἐνόμιζον καὶ ἐνεθυμοῦντο τήν τε περὶ Πύλον ξυμφορὰν καὶ εἴ τις ἄλλη αὐτοῖς γένοιτο.

IV. Translate :—

Plato, *Protagoras*, xvi. p. 327 c., *from* "*οὕτως οἴου καὶ νῦν,*" *to* "*καὶ οὐδ' εἷς σοι φαίνεται.*"

Explain the allusion in *εἶεν ἄγριοί τινες κ.τ.λ.*

Write a grammatical note on the optative *εἶεν.*

V. Answer any *three* of the following questions :—

(1) What light is thrown on the history of the Homeric poems by the study of the "Epic dialect"?

(2) Show how the kinds of poetry, which successively arose in Greece, correspond to altered conditions, political and social.

(3) What can we gather as to the views of Euripides from his plays?

(4) Draw a plan of the environs of Syracuse, showing the positions held by the besiegers at the time of Demosthenes' arrival.

(5) How do you account for the comparative success of Athens in the earlier part of the Peloponnesian war, and for her ultimate defeat?

(6) What are the points of contrast and of agreement between Socrates and the Sophists? Illustrate your answer from the *Protagoras.*

[*Wednesday, 16th October* 1889.—2.30 *to* 4.30 *o'clock.*

I. Translate :—

Ταῦτα δέ, ὦ Κριτόβουλε, ἐγὼ διηγοῦμαι, ἔφη ὁ Σωκράτης, ὅτι τῆς γεωργίας οὐδ' οἱ πάνυ μακάριοι δύνανται ἀπέχεσθαι. ἔοικε γὰρ ἡ ἐπιμέλεια αὐτῆς εἶναι ἅμα τε ἡδυπάθειά τις καὶ οἴκου αὔξησις καὶ σωμάτων ἄσκησις εἰς τὸ δύνασθαι ὅσα ἀνδρὶ ἐλευθέρῳ προσήκει. πρῶτον μὲν γὰρ ἀφ' ὧν ζῶσιν οἱ ἄνθρωποι, ταῦτα ἡ γῆ φέρει ἐργαζομένοις, καὶ ἀφ' ὧν τοίνυν ἡδυπαθοῦσι, προσεπιφέρει· ἔπειτα δὲ ὅσοις κοσμοῦσι βωμοὺς καὶ ἀγάλματα καὶ οἷς αὐτοὶ κοσμοῦνται, καὶ ταῦτα μετὰ ἡδίστων ὁσμῶν καὶ θεαμάτων

παρέχει· ἔπειτα δὲ ὄψα πολλὰ τὰ μὲν φύει, τὰ δὲ τρέφει· καὶ γὰρ ἡ προβατευτικὴ τέχνη συνῆπται τῇ γεωργίᾳ, ὥστε ἔχειν καὶ θεοῖς ἐξαρέσκεσθαι θύοντας καὶ αὐτοὺς χρῆσθαι.

II. Translate into Greek :—

The tidings from Margarite, however, caused but little solicitude in the mind of Columbus. From what he had seen of the Indians in the interior, he had no apprehensions from their hostility. He knew their weakness and their awe of white men, and above all he confided in their terror of the horses, which they regarded as ferocious beasts of prey, obedient to the Spaniards, but ready to devour their enemies. He contented himself, therefore, with sending Margarite a reinforcement of twenty men with a supply of provisions, and detaching thirty men to open a road between the fortress and the port.

Tuesday, 8th April 1890.—11.30 *to* 1.30 *o'clock.*

I. (1) Translate :—

Homer, *Iliad*, xviii. 305-308, *from* "εἰ δ' ἐτεὸν," *to* "ἤ κε φεροίμην."

Explain the change of mood in the last line.

(2) Translate : –

Homer, *Iliad*, xviii. 550-560, *from* "Ἐν δ' ἐτίθει τέμενος," *to* "ἄλφιτα πολλὰ πάλυνον."

Scan the line *σκῆπτρον ἔχων ἑστήκει κ.τ.λ.*

II. (1) Translate :—

Euripides, *Hercules Furens*, 467-479, *from* "σὺ δ' ἦσθα Θηβῶν," *to* "ἔχοιτ' εὐδαίμονα."

Write notes on *ἠκροθινιαζόμην—ἀνημμένοι κάλως πρυμνησίοισι.* Scan the last line.

(2) Translate, with brief notes :—

Eurip., *Herc. Fur.*, 1409-1414, *from* "ΑΜ. ἰδοὺ τάδ', ὦ παῖ·," *to* "ποῦ κεῖνος ὤν."

III. (1) Translate :—

Thucydides, vii. 40, *from* "καὶ χρόνον μέν τινα ἀπέσχοντο ἀλλήλων," *to* "τοὺς ναύτας ἀκοντίζοντες."

(2) Translate, with brief notes of explanation :—

(*a*) *ἐπὶ δὲ τῷ πεδίῳ καὶ τῆς χώρας τοῖς κρατίστοις ἐς τὸ κακουργεῖν ᾠκοδομεῖτο τὸ τεῖχος, ἐπιφανὲς μέχρι τῆς τῶν Ἀθηναίων πόλεως.*

(*b*) *καὶ ὁ μὲν τοιαύτῃ ἤ ὅτι ἐγγύτατα τούτων αἰτίᾳ ἐτεθνήκει, ἥκιστα δὴ ἄξιος ὢν τῶν γε ἐπ ἐμοῦ Ἑλλήνων ἐς τοῦτο δυστυχίας ἀφικέσθαι διὰ τὴν πᾶσαν ἐς ἀρετὴν νενομισμένην ἐπιτήδευσιν.*

IV. (1) Translate :—

Plato, *Protagoras*, 337 E-338 B, *from* "ἐγὼ μὲν οὖν καὶ δέομαι," *to* "τῶν λόγων ἑκατέρου."

(2) Illustrate from the *Protagoras* the use of the words *ὑπόλογος—ὑπογράφειν—ἀναβολαί—ἄφετοι.*

Give Greek equivalents for "applaud"—"introduce" (a visitor)—

"run" (a race) — "quote" (an authority) — "an expert" — "an amateur."

V. Answer any *three* of the following questions :—

(1) What light does Homer's description of the Shield throw upon the history of Greek art?

(2) Trace briefly the history of the word Σοφιστής. In what sense is it fair to regard (1) Socrates, (2) Euripides, as the type of a Sophist?

(3) What arguments does Socrates, in the *Protagoras*, advance to show that virtue cannot be taught? How does Protagoras meet these arguments?

(4) Point out the successive mistakes made by the Athenian generals before Syracuse.

(5) Give some account of the relation in which Athens stood to her allies about 430 B.C.

(6) Give a brief account of the events that resulted in the establishment of the Theban supremacy.

Tuesday, 8th April 1890.—2.30 *to* 4.30 *o'clock.*

I. Translate :—

Ἐκεῖνος γὰρ λέγων μὲν τὸ αὐτὸ εἶναι πῦρ τε καὶ ἥλιον ἠγνόει ὡς τὸ μὲν πῦρ οἱ ἄνθρωποι ῥᾳδίως καθορῶσιν, εἰς δὲ τὸν ἥλιον οὐ δύνανται ἀντιβλέπειν, καὶ ὑπὸ μὲν τοῦ ἡλίου καταλαμπόμενοι τὰ χρώματα μελάντερα ἔχουσιν, ὑπὸ δὲ τοῦ πυρὸς οὔ· ἠγνόει δὲ καὶ ὅτι τῶν ἐκ τῆς γῆς φυομένων ἄνευ μὲν ἡλίου αὐγῆς οὐδὲν δύναται καλῶς αὔξεσθαι, ὑπὸ δὲ τοῦ πυρὸς θερμαινόμενα πάντα ἀπόλλυται· φάσκων δὲ τὸν ἥλιον λιθον διάπυρον εἶναι καὶ τοῦτο ἠγνόει, ὅτι λίθος μὲν ἐν πυρὶ ὢν οὔτε λάμπει οὔτε πολὺν χρόνον ἀντέχει, ὁ δὲ ἥλιος τὸν πάντα χρόνον πάντων λαμπρότατος ὢν διαμένει.

II. Translate into Greek :—

This night as I was in my sleep, I Dreamed, and behold the Heavens grew exceeding black; also it thundered and lightened in most fearful wise that it put me into an Agony. So I looked up in my Dream and saw the Clouds rack (*ὑπὸ τοῦ ἀνέμου φέρεσθαι*) at an unusual rate; upon which I heard a great sound of a Trumpet, and saw also a Man sit upon a Cloud, attended with the thousands of Heaven; they were all in flaming fire, also the Heavens were in a burning flame. I heard then a voice, saying, *Arise ye Dead and come to Judgement;* and with that the Graves opened, and the Dead that were therein came forth; some of them were exceeding glad, and looked upward; and some thought to hide themselves under the Mountains. Then I saw the Man that sat upon the Cloud open the Book and bid the World draw near.

B.—DEPARTMENT OF PHILOSOPHY.

LOGIC AND PSYCHOLOGY.

Thursday, 17th October 1889.—9 *to* 12 *o'clock.*

1. Define Logic, taking special note of its relations to Psychology.

2. What is the distinction between a real and a verbal proposition? On what grounds has it been impugned, and to what effect? State clearly the nature and the limits of Definition *per genus et differentiam.*

3. Put the following into logical form, and examine :—

"The man that hath no music in himself,
Nor is not mov'd with concord of sweet sounds,
Is fit for treasons, stratagems, and spoils;
The motions of his spirit are dull as night,
And his affections dark as Erebus:
Let no such man be trusted."

4. What is the nature of Scientific Hypothesis, and to what rules must it conform? How far does interpretation of obscure passages in a great writer (say, Plato) come under the designation of scientific hypothesis?

5. State and exemplify the Method of Concomitant Variations.

6. Point out the fallacy in each of the following, and give its technical name :—

(1) The human mind must be material, because man is mortal.

(2) Wickedness is not easily concealed, but nothing great is easy.

7. Define Sensation, and mark it clearly off from Emotion. What is the special value, to the psychologist, of the Muscular Sense?

8. State the problem of external or sense perception. Argue it in connexion with the theory of any one distinguished philosopher that you choose.

9. State the exact place in philosophy and in its history (with reasons) of each of the following philosophers :—Descartes, Kant, Bacon, Locke.

Wednesday, 9th April 1890.—9 *to* 12 *o'clock.*

1. Enumerate the Predicables; and interpret them, where possible, (1) in comprehension, (2) in extension. Give an example of each. When is Accident of real value in Definition?

2. What is the distinction between mediate and immediate inference? Give (where possible) the converse, the obverse (permutation), and the contrapositive of each of the following propositions :—

(1.) [Quoth Hudibras], "I smell a rat."

(2.) The longest road comes to an end.

(3.) Only Protestant princes can sit upon the throne of England.

(4.) Unasked advice is seldom acceptable.

(5.) Where no oxen are, the crib is clean.

3. Suppose the voice in the following to be addressed (1) to Macbeth himself, (2) to "all the house." Evolve the argument in either case, and express it in due logical form :—

> "Methought I heard a voice cry, *Sleep no more! Macbeth does murder sleep.*"

4. What are the difficulties in the way of scientific explanation of phenomena from "plurality of causes" and "intermixture of effects"?

In answer to Descartes' doctrine that "the Efficient Cause must at least have all the perfections of the effect," J. S. Mill replies, "If there be pepper in the soup, there must be pepper in the cook who made it." Name the fallacy here, and examine it on Mill's own doctrine of Cause.

5. State and exemplify the Method of Difference. What gives to this method its supreme scientific importance?

6. Give various meanings of "Analogy," and state on what the value of true analogical reasoning depends. Point out the real character of the Aristotelian "Enthymeme," and give an example. Suppose it said, "Pleasures are like poppies." What are the special points of resemblance here on which an analogical argument may be legitimately based?

7. Define Fallacy, and distinguish the four chief classes. Distinguish "undistributed middle" from "ambiguous middle," and exemplify each. When is an "argumentum ad hominem" fallacious and when not? Exemplify "reasoning in a circle." How does *petitio principii* differ from logical reasoning?

8. Compare Sight and Hearing as *intellectual* senses, and show on what grounds the superiority is ascribed to the former. Explain the nature and functions of the Muscular sense.

9. "The table I write on, I say, exists, that is, I see and feel it; and if I were out of my study, I should say it existed, meaning thereby, that if I were in my study I might perceive it, or that some other spirit actually does perceive it." In what respect is this analysis of the meaning of external existence inadequate? State the precise significance, in Berkeley's doctrine, of the last clause of the foregoing quotation.

10. On what ground is it held that we are often unconsciously acting, and what other explanations of the phenomena in question have been proposed? Critically examine the explanations.

11. Distinguish spontaneous mental association from reasoning, and the laws of association from those of reasoning. Give a brief account of the principal associative laws and the tendency into which they may ultimately be resolved. Illustrate.

MORAL PHILOSOPHY.

Friday, 18*th October* 1889.—9 *to* 12 *o'clock.*

1. Is a *Science* of Ethics possible? Argue the point.
2. Analyze Moral Judgment; and state the leading causes that tend to distort it.
3. Illustrate by reference to questions of property the mode in which conflicting judgments can have their validity tested.
4. Is it possible to *prove* the existence of Altruistic feeling? Take this in connexion with Butler's doctrine of the Object of Desire.
5. What is meant by Moral Habit? Show exactly its bearings on the Formation of Character.
6. Give a reasoned answer to the question, What is the ultimate Ethical End?
7. In what respects has the doctrine of Evolution affected Associational Ethics? Has it left Intuition where it was?
8. What is the place of Socrates in Ethical Philosophy? Give an outline of his teaching.
9. Give some account of the Platonic Good, and indicate how it stands related to Plato's theory of Ideas.
10. Give some account of the following Ethical systems:—Stoicism, Neo-Platonism, Kantism.
11. What has Ethics to say (1) to Theism, (2) to Pessimism?

Thursday, 10*th April* 1890.—9 *to* 12 *o'clock.*

1. "Thought is the key to all real knowledge." Explain the meaning of this, and indicate the various philosophical bearings of the truth it implies. Why not say that "Thought is *identical with* all real knowledge," or that "Thought and Reality are one"?
2. How far, and in what respect, is it true that Conscience is a *Social* product? Is man's social nature incompatible with the claims of Conscience to be superior to external authority? Explain. Does Self-love necessarily imply "disregard to the good of others"?
3. Enumerate the leading characteristics of Desire; and distinguish it from (1) Appetite, (2) Affection, (3) Will.
4. Set forth, with some degree of fulness, the Deterministic and the Libertarian theories of Will.
5. Give a classification of Duties, with clear statement of the grounds on which the classification rests, and examples of the leading Duties themselves. Indicate, with precision, the true place of Self-respect in a Scheme of Duties, and show under what laws Moral Character is formed.
6. Explain the nature and conditions of Remorse; and give some account of different theories of its appearance in consciousness.
7. How can there be such a thing as Casuistry in Morals? Is the

possibility of Casuistry a defect or the opposite? How so? Exemplify Casuistry, and show whether there be any ground for the popular notion that Casuistry is identical with Sophistry.

8. What is meant by saying that Virtue is Knowledge? Trace the ethical consequences of this position, and give historical references.

9. "The ethics of Plotinus represent, we may say, the moral idealism of the Stoics cut loose from nature." Fully explain this. What lines of philosophic thought, other than Hellenic, go to constitute Neo-Platonism?

10. Define "The Law of Nature," (1) as ethically, (2) as juridicially, conceived. Give some account of Grotius's teaching, and show its importance as affecting English ethical philosophy.

11. Enumerate the characteristic points in Hartley's philosophy. Trace the influence of Hartley in later British ethics.

12. What is Hegel's conception of Self-realization? Give a brief outline of German Pessimism, with critical remarks.

RHETORIC AND ENGLISH LITERATURE.

FIRST PAPER.

Friday, 18*th October* 1889.—1 *to* 2 *o'clock.*

Write an Essay on either of the following subjects :—

1. Shakespeare's character of Coriolanus.
2. The Argument of the *Areopagitica.*

SECOND PAPER.

Friday, 18*th October* 1889.—2 *to* 4 *o'clock.*

1. Explain and illustrate the following terms used in the Theoretical Course, *Metonymy*, *Inversion*, *Mixed Metaphor*, *Pronunciability in Style*, *Expository Literature*, *Demonstrative Oratory*, *Primary and Secondary Lyrics.*

2. Sketch the scheme of subjects adopted in the Historical Course for the Elizabethan Period of English Literature, mentioning representative names under each division.

3. Describe, with examples, the effects of the Celtic and Scandinavian Influences on the English Vocabulary, and those of the Norman Conquest on English Grammar.

4. Give some account (1) of Barbour and his writings, (2) of *The Vision of Piers Plowman*, (3) of Gower's *Confessio Amantis.*

5. In what respects is *Samson Agonistes* modelled on Greek Plays? Explain the Italicized portions of the following :—

(1) Light, *the prime work of God*, to me is extinct.
(2) Hid in her *vacant interlunar cave.*
(3) See how he lies *at random, carelessly diffused.*

(4) The bold Ascalonite . . . fled from his *lion ramp.*
(5) . . . of wisdom nothing more than *mean.*
(6) And with confusion *blank* his worshippers.
(7) Haughty, as is his *pile* high-built and proud.
(8) And lamentation to *the Sons of Caphtor.*

6. *Either* :—

(A) Characterize Dr Johnson's style ; and give a reasoned estimate of his powers as a critic, with special reference to his *Life of Dryden ;*

Or,

(B) State from what source the plot of *As You Like It* was derived ; and explain the connexion and the significance of the following phrases in the Play :—

(1) "There they live like the old Robin Hood of England."
(2) "Sir, you have wrestled well, and overthrown More than your enemies."
(3) "I love to cope him in these sullen fits, For then he's full of matter."
(4) "And then he drew a dial from his poke."
(5) "Dead shepherd, now I find thy saw of might, 'Who ever loved that loved not at first sight?'"
(6) "It is a melancholy of mine own, compounded of many simples."
(7) "The poor world is almost six thousand years old."
(8) "If I heard you rightly, The Duke hath put on a religious life."

7. Give the substance of Wordsworth's views of Poetry (1) as respects *themes*, (2) as respects *language.*

8. No. 1 of the following is a piece of blank verse, printed as prose ; the others are lines from English poems. Arrange No. 1 in its proper verse form, without changing a word or the order of the words ; and give the metrical formula and prosodic name of each of the others :—

(1) "How steadily that cragsman climbs while winds are whistling past him, billows raging hundreds of feet beneath ! one single slip would dash him down to death ; but every step is planted firmly, and he makes each cleft the means to reach a higher, till he stands in triumph on the top."
(2) "Here awa, there awa, wandering Willie."
(3) "The one only dwelling on earth that she loves."
(4) "With flames and flashing lights that thousand changes make."
(5) "Home they brought her warrior dead."
(6) "Hide me from my deep emotion, O thou wondrous Mother-Age."

(7) "For the Heathen have lost, and the Christians have won."
(8) "Scarcely does any discover his own true mate among thousands."

FIRST PAPER.

Thursday, 10*th April* 1890.—1 *to* 2 *o'clock.*

Write an Essay under *either* of the following titles, introducing a characteristic quotation if you can:—

1. A Scene in *Coriolanus*.
2. The Chorus and Its Function in *Samson Agonistes*.

SECOND PAPER.

Thursday, 10*th April* 1890.—2 *to* 4 *o'clock.*

1. Either (*a*) State the general classification of Literature proposed in the Course, with the main sub-distribution proposed under each kind; or (*b*) Mention, and briefly describe, the chief remains of the Anglo-Saxon Literature.

2. Either (*a*) Give some account of the Danish influence on the English Language, with reasons for the necessity of caution in distinguishing Danish words and forms; or (*b*) Note the stages in the influx of the Latin of the Third Period, specifying the non-Latin elements that were introduced during the process.

3. Either (*a*) Give some account of the chief English Prose-writers and Prose-writings of the second half of the fourteenth century; or (*b*) Name and describe some of Chaucer's Minor Poems, and the various works now reckoned as certainly or possibly Barbour's.

4. Either (*a*) Sketch the literary life of any *one* of the following:—Spenser, Bacon, Ben Jonson; or (*b*) Add a brief note of literary description and information to any *ten* of the following names:—John Napier, Richard Hooker, John Lyly, Sir Philip Sidney, George Chapman, Robert Greene, Michael Drayton, Joshua Sylvester, Christopher Marlowe, Sir John Davies, Dr Donne, Bishop Hall, Robert Burton, Thomas Dempster, The Earl of Stirling, Phineas Fletcher, George Wither, Robert Herrick, George Herbert, James Shirley.

5. Either (*a*) Note some of the more peculiar phenomena of the Literary History of the British Islands during the twenty years of the Puritan Ascendancy from 1640 to 1660, illustrating by the life of Milton; or (*b*) Describe the most notable effects of the Restoration on the subsequent Literature from 1660 to 1688, illustrating by the life of Dryden.

6. Either (*a*) Give the substance of Dr Johnson's estimate of Dryden's poetry, comparing it with the implied estimate of the same by Wordsworth; or (*b*) Distinguish between the *objective* and the *subjective* genius

in literature, illustrating the difference by examples from the history of English Poetry.

7. Explain, by indicating the context or otherwise, as many as you can of the following phrases and allusions in the prescribed readings :—

(1.) "The burning of those Ephesian books by St Paul's converts."

(2.) "I cannot praise a fugitive and cloistered vertue."

(3.) "An oligarchy of twenty ingrossers."

(4.) "We do not read that either Epicurus, or that libertine school of Cyrene, or what the Cynick impudence utter'd, was ever punished by the laws."

(5.) "Settle's is said to have been the first play embellished with sculptures."

(6.) "Charles could not run continually parallel with David."

(7.) "Triplets and Alexandrines, inserted by caprice, are interruptions of that constancy to which science aspires."

(8.) "My gracious silence, hail!"

(9.) "ridges horsed
With variable complexions."

(10.) "He lurched all swords of the garland."

(11.) "He'll go, he says, and sowl the porter of Rome gates by the ears: he will mow all down before him, and leave his passage polled."

(12.) "They say many young gentlemen flock to him every day, and fleet the time carelessly, as they did in the golden world."

(13.) "It is a melancholy of mine own, compounded of many simples."

8. Arrange No. 1 of the following in its proper form of blank verse, without changing a word or the order of the words; and give the metrical formula and the prosodic name of each of the others :—

(1.) "Thou art all that war and change have left me: years ago I saved thee from the wreck; and for thy welfare since then I have dragged on my pilgrimage in penitence upon the hated shores I else had left for ever. I can teach thee that there is healing in the sorest wounds which friendship gives."

(2.) "And feeding on herbs as a Nebuchadnezzar."

(3.) "But still his passion grew more violent and strong."

(4.) "And he asketh a seat 'mong the Peers of Great Britain."

(5.) "Angel forms beside him run."

(6.) "Nothing their blandishments move me, nothing their prattle of comfort."

(7.) "No—she never loved me truly: love is love for evermore."

C.—DEPARTMENT OF MATHEMATICS AND PHYSICS.

MATHEMATICS.

Tuesday, 15*th October* 1889.—2.30 *to* 4.30 P.M.

1. If two sides and the contained angle of one triangle be equal to two sides and the contained angle of another triangle, the two triangles shall be equal in every respect.

In a given straight line to find a point equally distant from two given points.

2. Of all the straight lines drawn from a given point to a given straight line the perpendicular is the shortest; and an oblique is longer the greater the angle it makes with the perpendicular.

O is a given point outside a given straight line L. A is any point on L; and P is any point equidistant from O and A. Show that OP is greater than half the perpendicular from O upon L.

3. In every triangle the square on the side opposite an acute angle is equal to the sum of the squares on the other two sides, diminished by twice the rectangle contained by either of these sides, and the projection on it of the other side.

Show that the area of the triangle whose sides are $3a$, $\sqrt{2a^2 + 2b^2 - c^2}$, and $\sqrt{2a^2+2c^2-b^2}$ is three times the area of the triangle whose sides are a, b, and c.

4. The locus of a point which moves so that the difference of the squares of its distances from two fixed points is constant is a straight line.

Show that the three perpendiculars from the vertices of a triangle upon the opposite sides are concurrent.

5. Angles in the same segment of a circle are equal to one another.

Prove that the lines which join the feet of perpendiculars in any triangle make equal angles with its sides.

6. To construct the common tangents to two given circles; and point out the various cases that arise according to the relative position of the two circles.

Two circles touch at O. OPQ meets the two circles in P and Q respectively: show that the locus of the middle point of PQ is a circle.

7. If a straight line be drawn parallel to one of the sides of a triangle, it shall cut the other sides or those sides produced, proportionally.

A, B, C, D are the angular points of a quadrilateral in order, prove that the centroids of the triangles ABC, BCD, ACD, ABD form a quadrilateral similar to $ABCD$.

8. Define the *power of a point with respect to a circle;* and show that the locus of a point equipollent with respect to two given circles is a straight line.

Show how to construct a circle to pass through two given points and touch a given circle.

Or, as an alternative,

Prove the theorem of Archimedes regarding the quadrature of a spherical zone.

A biconvex lens is bounded by two spherical surfaces, the centre of each of which lies on the other. If the common radius of the lens be 6 inches, find to three decimal places the number of square inches in its surface.

9. If two intersecting straight lines in space be respectively parallel and like directed with two other intersecting straight lines, the angles between the two pairs are equal.

If in the tetrahedron $ABCD$ the opposite edges AB and CD be perpendicular, show that the distances between the middle points of the two remaining pairs of opposite edges are equal.

10. If F be the focus of any conic and G the foot of the normal at P, then $FG=eFP$.

Find an expression for the subnormal in terms of the focal radius.

Or, as an alternative,

Establish the relation between the ordinate to the major axis of a parabola and the vertical abscissa.

Given the latus rectum, the position of the axis, and a point on a parabola, to construct its vertex.

11. The locus of the foot of the perpendicular from either focus upon the tangent to an ellipse is a circle.

Given one focus, the length of the major axis, a tangent and its point of contact, find the other focus.

12. If A and B be less than 90°, prove geometrically that $\sin(A-B) = \sin A \cos B - \cos A \sin B$, and show how to extend the theorem to angles of any magnitude. If $A+B+C=180°$, show that

$$\sin(A+2B)+\sin(B+2C)+\sin(C+2A) = 4 \sin\frac{A-B}{2} \sin\frac{B-C}{2} \sin\frac{C-A}{2}.$$

Wednesday, 16th October 1889.—9 *to* 11 A.M.

1. A sum of £258 was found, after lying at the same rate of interest for two years in the bank, to have accumulated to £260, 16s. 8d. It was allowed to lie for two years more at half the former rate of interest; find the amount to which it finally accumulated.

2. State what is meant by the terms *rational* and *integral* as applied to Algebraical Functions. Write down a general form for a homogeneous symmetric integral function of x, y, z of the second degree.

Expand and arrange according to powers of x

$$(x+a)(x^2+ax+a^2)(x-a)(x^2-ax+a^2);$$
$$(x-y)^4(x+y)^8.$$

3. Show that the integral function x^2+px+q can always be resolved

into two factors of the first degree; and point out the condition that the co-efficients in these factors be real.

Factorise as completely as you can

(α) $6x^2+16xy+10y^2$;

(β) x^8-y^8;

(γ) $x^2+3xy+8x+18y+12$.

4. Prove that if the integral function m be a common measure of the integral functions p and q, it will also measure the sum and difference of p and q.

If x^2+ax+b and $x^2+a'x-b$ have a common measure, then $4b=a^2-a'^2$ and the common measure is $x+\frac{a+a'}{2}$.

Find the G.C.M. of

$$x^4+p^2x^2+p^4 \text{ and } x^4+2px^3+p^2x^2-p^4.$$

Or, as an alternative,

Show how to sum any series whose n^{th} term is an integral function of n.

Sum the series whose n^{th} term is $2n+3r^n$;

Also the series $1.r+3.r^2+5.r^3+7.r^4+9.r^5+\ldots$

5. State the principle of indeterminate co-efficients.

Express $\frac{x^2+1}{(x-1)(x-2)(x-3)}$ as the sum of three partial fractions.

Show that $x^4+(x-a)^4+a^4$ is a perfect square.

6. Find the relations between the co-efficients and roots of a quadratic equation.

Find the equation with real co-efficients whose roots are

$$2(-1+i\sqrt{3}) \text{ and } (-1+i\sqrt{3})^2.$$

Solve either of the equations

$$(1)\quad x^2+x-\frac{1}{x}+\frac{1}{x^2}=2.$$

$$(2)\quad \frac{b+c}{x-a}+\frac{c+a}{x-b}+\frac{a+b}{x-c}=3.$$

7. How many solutions would you expect *à priori* to find for the system of equations

$$x^2+xy+y^2=x^3-y^3=91?$$

Find as many actual solutions as you can.

An annuity of £100 has been unpaid for two years, the last payment being just due. It is found that an equitable equivalent is an annuity of £106, 1s. 9d. to run for two years, the first payment to be due a year hence. Find the rate of interest allowed.

8. If $\frac{a}{b}=\frac{b}{c}=\frac{c}{d}$, prove that each of these ratios $=\frac{\sqrt[3]{a}}{\sqrt[3]{b}}$,

and also $=\frac{a+b+c}{b+c+d}$. If $\frac{x^2-yz}{x}=\frac{y^2-zx}{y}$, and if x and y are not zero, and not equal, show that each is equal to $\frac{z^2-yx}{z}$, and that $yz+zx+xy=0$.

9. Prove the Binominal Theorem for a positive integral index. Find the value of

$$(1+i\sqrt{3})^5+(1-i\sqrt{3})^5.$$

Write down the middle term of $(a-x)^{2n}$ where n is an integer.

10. Deduce formulæ for the solution of a triangle, including the determination of its area, when the base and the two base-angles are given.

Calculate the distances of the ortho-centre from the three vertices in terms of the above data.

Show that

$$\frac{bc(b-c)\sin 2A}{b^2+c^2-a^2}+\frac{ca(c-a)\sin 2B}{c^2+a^2-b^2}+\frac{ab(a-b)\sin 2C}{a^2+b^2-c^2}=0.$$

11. Find the equation of a straight line in terms of its intercepts on the axis of co-ordinates.

Find the equation of a straight line which passes through the point (a, b) and through the intersection of $x/a+y/b=1$ and $x/a+y/b=2$.

12. A point moves so that the sum of its distances from two fixed points remains constant: find the equation to its locus.

Or, as an alternative,

Show that

$$\cos\theta=1-\theta^2/2\,!+\theta^4/4\,!-\theta^6/6\,!+\ \ldots$$

Monday, 7th April 1890.—3 *to* 5 *o'clock.*

1. Any two sides of a triangle are together greater than the third.

Construct a triangle having given two of its angles, and the sum of two of its sides.

2. Find the locus of all points equidistant from two given points; and hence show that the three perpendicular bisectors of the sides of a triangle are concurrent.

Show that the three perpendiculars from the vertices of a triangle upon the opposite sides are concurrent.

3. Show how to construct a triangle equal in area to a given rectilinear polygon.

Show that any line through the centre of the circle circumscribing a regular hexagon bisects the area of the figure.

4. The sum of the squares on two sides of a triangle is double of the sum of the squares on half the base, and on the median to the base.

If one diagonal of a quadrilateral inscribed in a circle is bisected by the other, show that twice the square on the latter is equal to the sum of the squares on the four sides.

5. Give a construction for finding the centres of the inscribed and escribed circles of a triangle.

Show that of the four points so determined each is the ortho-centre of the triangle formed by joining the other three.

6. If two circles touch either internally or externally, the line joining their centres passes through the point of contact.

Two circles touch internally at A. CD is a chord of the outer circle which touches the inner at P; show that CP and PD subtend equal angles at A.

7. Show that the internal and external bisectors of the vertical angle of a triangle divide the base in the ratio of the sides.

Show how to find a point such that its distances from three given points A, B, C, are proportional to three given lengths a, b, c.

8. If two straight lines are at right angles to the same plane, they are parallel to one another.

Are the following constructions always possible? Through a given straight line to draw a plane (1) perpendicular to a given plane, (2) perpendicular to a given straight line.

9. Show that the volume of a triangular pyramid is one-third of its height multiplied by the area of its base; and extend this result to any pyramid.

The area of the base of a right circular cone is 3 square feet, and its verticle angle is 90°; calculate its volume to three significant figures.

Or, as an alternative,

Show that the cross ratio of the four points in which any transversal meets a pencil of four given straight lines is constant.

AOD, BOE, COF are three concurrent straight lines through the vertices of a triangle ABC meeting the opposite sides in D, E, F respectively. EF meets BC in D': show that D and D' are harmonically conjugate with respect to B and C.

10. Given the focus and directrix of a parabola, show how to find any number of points on the curve.

Given the focus of a parabola and two points on the curve, find the directrix. How many solutions of the problem are there?

11. Assuming the addition theorem for $\cos(A \pm B)$ and $\sin(A \pm B)$, deduce the following:—

$\cos 2A = (1 - \tan^2 A)/(1 + \tan^2 A)$;

$\cos(A + B + C) = \cos A \cos B \cos C - \Sigma \cos A \sin B \sin C$.

Simplify $\sin 2\theta \cos\theta/(1 + \cos 2\theta)(1 + \cos\theta)$.

Find expressions for all the angles that satisfy the equation

$$\cos 2\theta + \sin\theta - 1 = 0.$$

12. In any triangle ABC show that

$$\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c} = \frac{1}{2R}.$$

Find the angles and sides of the triangle whose three vertices are the centres of the escribed circles of the triangle, and show that its area is $R(a+b+c)$.

Tuesday, 8th April 1890.—9 *to* 11 *o'clock.*

1. Expand the product

$$(1+a_1x)(1+a_2x)(1+a_3x) \ldots\ldots (1+a_nx)$$

to three terms in powers of x, and state the law of the formation of the coefficients.

Expand and simplify

$$(1+x+x^2)(1-x+x^2)(1+x^2+x^4).$$

Prove the identity

$$[x^3-y^3+6xy(2y+x)]^2-[y^3-x^3+6xy(2x+y)]^2 = 36xy(x+y)(x-y)^3.$$

2. Explain the principle of Indeterminate Coefficients.

Express in partial fractions

$$\frac{x}{(x-1)(x-2)} \text{ and } \frac{1}{(x-1)^2(x^2+1)}.$$

Show that

$$\Sigma\frac{(x-a)(y-a)(z-a)}{(a-b)(a-c)} = (x+y+z)-(a+b+c).$$

Where Σ refers to the variables a, b, and c.

3. Show that every integral function of x of the second degree can be resolved into two linear factors; and point out the condition that the coefficients of these factors be real.

Factorise the following: (α) $6x^2+59x+105$;

(β) $(x^4-y^4)^2+(x^3-y^2)^4$; (γ) $2xy+7x+6y+21$.

4. Explain what is meant by two *Equivalent* Systems of Equations. Show that the two systems

$$\left.\begin{matrix} U=0 \\ V=0 \end{matrix}\right\} \text{ and } \left.\begin{matrix} lU+mV=0 \\ l'U+m'V=0 \end{matrix}\right\},$$

where l, m, l', m' are constants, are equivalent, provided $lm'-l'm \neq 0$; and give some simple example of this theorem.

Solve the following

(α) $x/(x+a-b)-x/(x+a+b)=2b/x$;

(β) $3x-4y^2=14$, $2x+3y^2=32$.

5. Find the values of λ between which the roots of the equation $\lambda x^2-2(\lambda-1)x+\lambda+1=0$, are (1) both real, (2) both imaginary.

Solve the equations

$$(1)\quad x\sqrt{x^2+1}+x\sqrt{x^2-1}=2.$$

$$(2)\quad \begin{cases} x^2+y^2+3xy=79. \\ x+y+2xy=38. \end{cases}$$

6. Show how to express the square root of a binomial surd of the form $p+\sqrt{q}$ in a linear surd form, when such expression is possible.

Express as fractions with rational denominators

$$\frac{1}{1-\sqrt{2}+\sqrt{3}} \text{ and } \frac{1}{1-\sqrt{2}+\sqrt[3]{4}}.$$

Show that

$$\frac{1}{\sqrt{3+4i}}+\frac{1}{\sqrt{3-4i}}=\frac{4}{5}.$$

7. Find the sum of n terms of an Arithmetic Series.

Sum to n terms the series

$$a\alpha+(a+b)(\alpha+\beta)+(a+2b)(\alpha+2\beta)+\ \ldots\ldots$$

8. Define a logarithm; and show how to calculate $\log_b x$, when you are given a table of logarithms to base a.

Find the characteristic of $\log_{\sqrt{2}} 95$.

Trace the graph of the function $y=\log\{1/(x-1)\}$.

9. How many r-permutations can be made with m different things, 1st, when repetition is allowed; 2nd, when repetition is not allowed?

There are 15 candidates for 10 seats in a school board. In how many different ways may the election turn out, if attention be paid to the order of the candidates; and what is the chance that two given candidates head the poll, it being supposed that any one candidate is as likely as any other to be in a given place?

Or, as an alternative,

Show that if U_n and V_n be always positive, and if V_n/V_{n-1} be always $> U_n/U_{n-1}$, then ΣU_n, is convergent provided ΣV_n is convergent; and hence show that a series is convergent if its convergency ratio be ultimately numerically less than 1.

Examine the convergency of $\Sigma x^2/n!$, and $\Sigma n^3/(n^4+1)$.

10. Show that $x>\sin x>x-\frac{1}{4}x^3$, and hence show that $L\sin x/x=1$ and $L\tan x/x=1$, when $x=0$.

Evaluate the following limits

$$L_{x=1}\frac{x^3+x^2-5x+3}{x^3-2x^2-x+2},\quad L_{x=0}\frac{1-\cos 2x}{\tan^2 2x}.$$

11. Prove that the equation of every straight line can be written in the form $x\cos\alpha+y\sin\alpha-p=0$; and explain the geometrical meaning of p and α.

Find the equation of the locus of a point whose distance from $3x+5y-1=0$ is twice its distance from $x+y+1=0$.

Or, as an alternative,

Prove that the locus of the foot of the perpendicular from the focus of an ellipse upon the tangent is a circle.

Hence show that, if p be the perpendicular from the centre on the tangent at P, then $FP.F'P=a^2b^2/p^2$.

12. Find the condition that the straight line $y=mx+n$ should touch the parabola $y^2=4ax$.

If two tangents of a parabola intersect the axis at angles which are complementary, determine the locus of their point of intersection.

Or, as an alternative,

Prove geometrically that the locus of the middle points of a series of parallel chords of a conic section is a straight line.

Find the equation to the diameter of $x^2/a^2+y^2/b^2-1=0$, which bisects all chords whose inclination to the x-axis is θ.

NATURAL PHILOSOPHY.

Thursday, 17*th October* 1889.—1 *to* 4 *o'clock.*

A.

1. Explain the graphic method of representing velocities and accelerations. A point is moving due west with a velocity of 10 units. Determine graphically or otherwise the velocity that must be imparted to it, to make it move north-west with the same speed.

2. What are the two systems on which forces are measured? How many poundals are there in 10 lbs., and what velocity would this force generate in a mass of 1 lb. if applied to it for one second?

3. Explain the term "Centrifrugal Force."

A mass of $\frac{1}{2}$ a pound is attached to a string 2 feet long and whirled round uniformly in a vertical circle three times a second. Find the tension of the string at the top and bottom of the circle.

4. What is the dynamical principle on which the measurement of time depends? Define the siderial and the mean solar day.

5. A bullet 1000 lbs. in weight is driven from the mouth of a gun, whose barrel is 12 feet long, with a speed of 1500 feet per second. Find the average force acting on the bullet in the barrel.

6. At the point O, the intersection of diagonals of a square, forces of 2 and 3 units respectively act along the diagonals, and forces of 1 and 5 units respectively act perpendicular to the sides of the square. Find the resultant force.

7. State the principle of Virtual Velocities, and apply it to find the relation between the power and the weight in the wheel and axle.

8. Define the Centre of Inertia of a system.

AB is a massless rod 4 feet long, on which are arranged at intervals of 1 foot, 5 balls, whose masses are 1, 2, 3, 4, and 5 respectively. Find the centre of inertia.

9. Write down the formula for calculating the time of vibration of a simple pendulum. A pendulum 39·14 inches long beats seconds at the sea level at London. Calculate the force of gravity at London.

10. Define the hodograph of a particle's path, and hence find the path traced out, in consequence of the "Aberration of Light," by a fixed star.

11. Find the pressure on a vertical lock gate, 16 feet broad, against which the water rises to a height of 9 feet.

[1 cubic foot of water weighs 62·5 lbs.]

12. Define the metacentre, and explain the conditions of stability in a floating body.

B.

1. Define the Temperature of a substance :—and point out the physical principle on which its absolute measurement ultimately depends.

2 Define Viscosity, and explain its cause in liquids and in gases. What is the nature and cause of Viscidity?

3. What is the scientific measure of the Compressibility of a Liquid? Give a (general) statement as to the amount of compressibility of water, and point out how it depends on pressure and on temperature.

4. What supports the column of water in a capillary tube? From the answer show at once that the rise is inversely as the bore of the tube.

5. State, generally, the mode of production of the Rainbow. How would it be affected by a change of the refractive index of water?

6. State the elementary facts of Fluorescence, and show how they have been explained.

7. Explain why distant hills appear blue, while the setting sun appears red.

8. State the physical basis of Spectrum Analysis, and give a general account of the sort of information which the method can give as to stars, nebulae, and comets.

9. Compare, and contrast, the fundamental experiments connected with electric, and magnetic, forces.

10. Explain what is meant by the Quality of a musical sound, and give its physical explanation.

11. State the principles on which the measurement of Thermal Conductivity depends.

12. How has it been established that Light is an Electro-magnetic phenomenon?

[*Candidates for the Neil-Arnott Prize will answer the following, in addition to not more than eight of the preceding twenty-four questions.*]

α. State the principles on which rests the measurement of very small time-intervals.

β. How can it be applied to the Duration of Impact, and how to the speed of propagation in a nerve?

γ. Why is a small capsule capable of withstanding greater internal pressure than is a large one of the same material?

δ. Explain the nature of the colour-sensation; showing why two liquids may have apparently the same precise colour, and yet give totally different absorption spectra.

ε. Why is a tube more rigid than a rod of the same material, and of the same mass per foot?

Wednesday, 9th April 1890.—1 *to* 4 *o'clock.*

A.

1. Define *Momentum*, and *Force*, and show how they are related. What is meant by an *Impulse*, and in what respect does it differ from a Force?

2. Define *Centrifugal Force*, and show how it can be measured. Calculate in tons' weight the horizontal pressure on the rails when an engine of 100 tons runs, at 32 feet per second, on a curve of 320 feet radius.

3. If a stone, thrown upwards, rises 150 feet in two seconds, what was its initial speed and how high will it rise?

4. A triangle is revolving simultaneously about each of its sides with an angular velocity proportional to the length of the side, what is the nature of the resultant motion: (*a*) if the sides be taken in the same order, (*b*) if two are taken in one order, the other in the opposite?

5. State Kepler's Laws of Planetary Motion, with Newton's immediate deduction from each.

6. State, and justify, the method of weighing with a balance whose arms are unequal.

7. How is it proved, and how can it be experimentally verified, that a simple pendulum, *slightly* displaced in any manner, describes an elliptic orbit?

8. Explain, and justify, the fundamental principle upon which we investigate the conditions of equilibrium of a fluid or of a flexible solid.

9. Show how to determine the subsequent motion, when two smooth spheres impinge on one another in a given manner.

10. Describe a process by which the Coefficient of Friction between two flat solids can be measured; stating the principles on which it depends.

11. What is meant by Annual Parallax, and how does it affect the apparent position of a star?

12. Describe, and explain, the phenomenon known as the *Harvest Moon.*

B.

1. Mention some phenomena which show that a surface tension exists in liquids. If water rise 1 inch in a capillary tube of $\frac{1}{20}$ inch radius, determine the surface tension of water.

2. Explain how the Rigidity of an isotropic body is measured. Contrast the behaviour of india rubber and of cork under pressure or tension, each applied in one direction only.

3. On what physical causes do the Pitch, Intensity, and Quality of a musical note respectively depend? Give reasons for your answers.

4. Water is compressed by $\frac{1}{21000}$ per unit volume by the pressure of a column of itself, 1033 centimetres high. How is this ascertained? Find from it the velocity of sound in water.

5. Trace the course of a pencil of rays from a small object seen under still water to the eye. Explain how the apparent depth of the object varies with the position of the eye.

6. Describe the phenomenon known as the Polarisation of Light. Upon what supposition, as to the nature of light vibrations, does its explanation rest?

7. How does the spectrum of one of the planetary nebulæ differ from that of the sun? What are the conditions as to temperature, etc., which determine whether a line in the spectrum shall appear bright or dark?

8. Distinguish between the conduction and radiation of heat. Show how the unit of thermal conductivity depends on the units of length, time, mass, and temperature.

9. Describe an experiment, designed to compare, by the method of radiation, the specific heats of mercury and water.

10. Trace on a Watt's diagram the isothermal curves for carbonic acid gas, at temperatures slightly above and slightly below its critical temperature.

11. The charge on a spherical electrical conductor is allowed to distribute itself over another equal conductor, by means of a long thin wire. Compare the energy of the initial and final distributions, and account for the apparent loss of energy.

12. Explain how Induction Currents are produced by the relative motion of a conductor and a magnet. How has this principle been applied to ascertain the magnetic dip at any station?

EXAMINATIONS IN ARTS FOR HONOURS.

A.—DEPARTMENT OF CLASSICAL LITERATURE.

LATIN.

Friday, 11th April 1890.—9 *to* 12 *o'clock.*

I. For Translation :—

C. Plinius Calvinae suae S.

Si pluribus pater tuus vel uni cuilibet alii quam mihi debuisset, fuisset fortasse dubitandum an adires hereditatem etiam viro gravem. Cum vero ego ductus adfinitatis officio dimissis omnibus qui, non dico molestiores, sed diligentiores erant creditor solus exstiterim, cumque ego nubenti tibi in dotem centum milia contulerim praeter eam summam quam pater tuus quasi de meo dixit (erat enim solvenda de meo), magnum habes facilitatis meae pignus, cuius fiducia debes famam defuncti pudoremque suscipere ; ad quod ne te verbis magis quam rebus horter, quidquid mihi pater tuus debuit, acceptum tibi fieri iubebo. Nec est quod verearis ne sit mihi onerosa ista donatio. Sunt quidem omnino nobis modicae facultates, dignitas sumptuosa, reditus propter conditionem agellorum nescio minor an incertior ; sed quod cessat ex reditu frugalitate suppletur, ex qua velut fonte liberalitas nostra decurrit ; quae tamen ita temperanda est ne nimia profusione inarescat, sed temperanda in aliis, in te vero facile ratio constabit, etiamsi modum excesserit. Vale.

II. For Latin Prose :—

The contempt and hatred of the Duke were retaliated by Louis with equal energy, though he used a thicker veil to conceal his sentiments. It was impossible for a man of his profound sagacity not to despise the stubborn obstinacy which never resigned its purpose, however fatal perseverance might prove, and the headlong impetuosity which commenced its career without allowing a moment's consideration for the obstacles to be encountered. Yet the King hated Charles even more than he contemned him, and his scorn and hatred were the more intense, that they were mingled with fear ; for he knew that the onset of the mad bull, to whom he likened the Duke of Burgundy, must ever be formidable, though the animal makes it with shut eyes. It was not alone the wealth of the Burgundian provinces, the discipline of the warlike inhabitants, and the mass of their crowded population which the King dreaded, for the personal qualities of their leader had also much in them that was dangerous. The very soul of bravery, which he pushed to the verge of rashness, and beyond it—profuse in expenditure —splendid in his court, his person, and his retinue, in all which he displayed the hereditary magnificence of the house of Burgundy, Charles

the Bold drew into his service almost all the fiery spirits of the age whose tempers were congenial ; and Louis saw too clearly what might be attempted and executed by such a train of resolute adventurers, following a leader of a character as ungovernable as their own.

Friday, 11*th April* 1890.—1 *to* 4 *o'clock.*

I. Translate :—

(1) Lucretius, v. 680-700, *from* "Crescere itemque dies," *to* "ornata notarunt."

(2) Virgil, *Georgics*, i. 187-203, *from* "Contemplator item," *to* "prono rapit alveus amni."

(3) Horace, *Epistles*, i. 7, 60-85, *from* "Scitari libet," *to* "et amore senescit habendi."

(4) Propertius, iii. 21-44, *from* "Iuppiter, Antiopae," *to* "rupe, Aracynthe, tua."

(5) Cicero, *Epist. ad Familiares*, v. 20, 7, 8, 9, *from* "Quod scribis de beneficiis," *to* "nam, numeratum si cuperem, non erat."

(6) Tacitus, *Annals*, iv. 51, *from* "Interea barbari," *to* "saeva hiems subvenit."

Saturday, 12*th April* 1890.—9 *to* 12 *o'clock.*

I. Translate and comment on the following :—

(1) Etenim, ut ait ingeniosus poëta et auctor valde bonus, proeliis promulgatis *pellitur e medio* non solum ista vestra verbosa simulatio prudentiae, sed etiam ipsa illa domina rerum, *sapientia: vi geritur res: spernitur orator*, non solum odiosus in dicendo ac loquax, verum etiam *bonus: horridus miles amatur:* vestrum vero studium totum iacet. *Non ex iure manum consertum, sed mage ferro*, inquit, *rem repetunt.*

(2) Ineunt magistratum tribuni plebis, qui omnes se de me promulgaauros confirmarant. Ex iis princeps emitur ab inimicis meis, is, quem homines in luctu irridentes Gracchum vocabant : quoniam id etiam fatum tivitatis fuit, ut illa ex vepreculis extracta nitedula rem publicam concretur adrodere. Alter vero, non ille Serranus ab aratro, sed ex deserto Gavii Oleli horto a calatis Gaviis in Calatinos Atilios insitus, subito, nominibus in tabulas relatis, nomen suum de tabula sustulit.

(3) Neque vero tam durus in plebem noster ordo fuit, ut eam coli nostra modica liberalitate noluerit, neque hoc liberis nostris interdicendum est, ne observent tribules suos, ne diligant, ne conficere necessariis suis suam tribum possint, ne par ab iis munus in sua petitione respectent. Haec enim plena sunt officii, plena observantiae, plena etiam antiquitatis.

(4) Quibus in literis omnia mihi periucunda fuerunt praeter illud, quod parum diligenter possessio salinarum mearum a te procuratore defenditur. Ais enim, ut ego discesserim, omnia omnium dicta, in his etiam Sestiana, in me conferri.

II. Translate and comment on the following:—

(*a*) Centurionatum inde egit. Citatus ab imperatore, nomen, ordinem, patriam, numerum stipendiorum, quae strenue in proeliis fecisset; et cui erant dona militaria, edebat.

(*b*) Nam censuit, in quinquennium magistratuum comitia habenda: utque legionum legati, qui ante praeturam ea militia fungebantur, iam tum praetores destinarentur: princeps duodecim candidatos in annos singulos nominaret. Haud dubium erat, eam sententiam altius penetrare, et arcana imperii temptari.

(*c*) Exim ventum Elephantinem ac Syenen, claustra olim Romani imperii, quod nunc rubrum ad mare patescit.

(*d*) Tum Cn. Pompeius tertium consul, corrigendis moribus delectus, et gravior remediis, quam delicta erant, suarumque legum auctor idem ac subversor, quae armis tuebatur, armis amisit.

(*e*) Nam primo duodetim tabulis sanctum, ne quis unciario foenore amplius exerceret, cum antea ex libidine locupletium agitaretur: dein rogatione tribunicia ad semuncias redacta, postremo vetita versura.

III. Translate and comment on the following passages:—

(1)
Desine mollium
Tandem querelarum, et potius nova
Cantemus Augusti tropaea
Caesaris et rigidum Niphaten,

Medumque flumen gentibus additum
Victis minores volvere vertices,
Intraque praescriptum Gelonos
Exiguis equitare campis.

(2)
Io triumphe, tu moraris aureos
Currus et intactas boves?
Io triumphe, nec Iugurthino parem
Bello reportasti ducem,
Neque Africanum, cui super Carthaginem
Virtus sepulcrum condidit!

(3)
Huc venturus erat Maecenas optimus atque
Cocceius, missi magnis de rebus uterque
Legati, aversos soliti componere amicos.

(4)
Consultus iuris et actor
Causarum mediocris abest virtute diserti
Messallae, nec scit quantum Cascellius Aulus,
Sed tamen in pretio est.

IV. Answer *five* of the following questions:

(1) What means to prevent electoral corruption were available at Rome in the last century of the Republic?

(2) Narrate clearly the circumstances that led to the rupture between Caesar and the Senate in 49 B.C., and point out the legal questions at issue.

(3) Describe and discuss the foreign policy of Tiberius.

(4) What was "Majestas," and how did it become an instrument of oppression? Collect instances from Tacitus to show how various were the charges it might be made to cover.

(5) Compare the value of Cicero's letters with that of his speeches as sources of historical information.

(6) How far is it possible to determine the order in which Virgil's Eclogues were composed?

(7) Indicate points of resemblance and of contrast between the Georgics of Virgil and the poem of Lucretius.

(8) What materials had Tacitus at his disposal for the writing of history?

(9) Trace in the Satires of Horace the influence of Terence, Lucilius, Lucretius, the philosophical writings of Cicero.

(10) The evidence of Cicero and Horace as to the character and influence of the Roman drama.

(11) Passages in the Roman poets illustrative of the events which happened and the state of feeling which prevailed in Italy between the death of Julius Caesar and the Treaty of Brundisium.

(12) The use of the Greek mythology in Lucretius, Virgil, and Horace.

(13) The artistic type of historical composition realised in Roman literature contrasted with that realised in Greek literature.

GREEK.

Saturday, 12th April 1890.—1 *to* 4 *o'clock.*

Translate, with very short notes where necessary:—

1. Homer, *Odyssey*, v. 59-74, *from* "πῦρ μὲν ἐπ' ἐσχαρόφιν," *to* "τερφθείη φρεσὶν ἦσιν."

2. Aesch., *Agam.*, 412-426, *from* "πάρεστι σιγᾶς," *to* "ὀπαδοῖς ὕπνου κελεύθοις."

The reading of the MSS. is here given, to be corrected if it seems necessary.

3. Aesch., *Choeph.*, 994-1004, *from* "τί σοι δοκεῖ," *to* "πολλὰ θερμαίνοι φρενί."

4. Thuc., ii. 87, *from* "Ἡ μὲν γενομένη ναυμαχία," *to* "δὲ ἄνευ ἀλκῆς οὐδὲν ὠφελεῖ."

5. Aristotle, *Eth.*, iii. 5, 17, *from* "Εἰ δέ τις λέγοι," *to* "ἀναφέροντες πράττουσιν ὁπωσδήποτε."

Summarise the argument.

Unseen Passage.

Translate:—

ΑΘ. *ἐπεὶ δὲ ἀεὶ ψυχὴ συντεταγμένη σώματι τοτὲ μὲν ἄλλῳ, τοτὲ δὲ ἄλλῳ, μεταβάλλει παντοίας μεταβολὰς δι' ἑαυτὴν ἢ δι' ἑτέραν ψυχήν, οὐδὲν ἄλλο ἔργον τῷ πεπτευτῇ λείπεται πλὴν μετατιθέναι τὸ μὲν ἄμεινον γιγνόμενον ἤθος εἰς βελτίω τόπον, χεῖρον δὲ εἰς τὸν χείρονα, κατὰ τὸ πρέπον αὐτῶν ἕκαστον, ἵνα τῆς προσηκούσης μοίρας λαγχάνῃ.*

ΚΛ. *πῇ λέγεις;*

ΑΘ. *Ὧδε. ἐπειδὴ κατεῖδεν ἡμῶν ὁ βασιλεὺς ἐμψύχους οὔσας τὰς πράξεις ἁπάσας καὶ πολλὴν μὲν ἀρετὴν ἐν αὐταῖς οὖσαν, πολλὴν δὲ κακίαν, ἀνώλεθρον δὲ ὂν τὸ γενόμενον, ἀλλ' οὐκ αἰώνιον, ψυχήν καὶ σῶμα, καθάπερ οἱ κατὰ νόμον ὄντες θεοί—γένεσις γὰρ οὐκ ἄν ποτε ἦν ζώων ἀπολομένου τούτοιν θατέρου—καὶ τὸ μὲν ὠφελεῖν ἀεὶ πεφυκός, ὅσον ἀγαθὸν ψυχῆς, διενοήθη, τὸ δὲ κακὸν βλάπτειν, ταῦτα πάντα ξυνιδὼν ἐμηχανήσατο, ποῦ κείμενον ἕκαστον τῶν μερῶν νικῶσαν ἀρετήν, ἡττωμένην δὲ κακίαν ἐν τῷ παντὶ παρέχοι μάλιστ' ἂν καὶ ῥᾷστα καὶ ἄριστα. μεμηχάνηται δὴ πρὸς πᾶν τοῦτο τὸ ποιόν τι γιγνόμενον ἀεὶ ποίαν ἕδραν δεῖ μεταλαμβάνον οἰκίζεσθαι καὶ τίνας ποτὲ τόπους· τῆς δὲ γενέσεως τοῦ ποίου τινὸς ἀφῆκε ταῖς βουλήσεσιν ἑκάστων ἡμῶν τὰς αἰτίας· ὅπῃ γὰρ ἂν ἐπιθυμῇ καὶ ὁποῖός τις ὢν τὴν ψυχήν, ταύτῃ σχεδὸν ἑκάστοτε καὶ τοιοῦτος γίγνεται ἅπας ἡμῶν ὡς τὸ πολύ.*—PLATO, *Laws* x. 903D-904C.

Monday, 14*th April* 1890.—9 *to* 12 *o'clock.*

I. For Greek Prose:—

Aristotle, in his book on Youth and Old Age, says that the death which overtakes us in old age is without sadness. And as to him who comes from a long journey, before he enters into the gate of his city, the citizens thereof go forth to meet him, so do those citizens of the Eternal Life go forth to meet the noble Soul; and they do thus because of his good works and acts of contemplation, which were of old rendered unto God and withdrawn from worldly affairs and thoughts. Hear what Tullius says in the person of Cato the elder: "It seems to me that I already see, and I uplift myself in the greatest desire to see, your fathers, whom I loved, and not only those whom I knew myself, but also those of whom I have heard spoken." In this age, then, the noble soul renders itself unto God, and awaits the end of this life with much desire; and to itself it seems that it goes out from the Inn to return home to the Father's mansion; to itself it seems to have reached the end of a long journey and to have reached the City; to itself it seems to have crossed the wide sea, and returned into the port. O, miserable men and vile, who run into this port with sails unfurled; and there where you should find rest, are broken by the fury of the wind and wrecked in the harbour. —DANTE.

II. For translation :—

ΤΤ. ὦ χαῖρε καὶ σὺ Μενέλεως, κήδευμ' ἐμόν.
ἔα· τὸ μέλλον ὡς κακὸν τὸ μὴ εἰδέναι.
ὁ μητροφόντης ὅδε πρὸ δωμάτων δράκων
στίλβει νοσώδεις ἀστραπάς, στύγημ' ἐμόν.
Μενέλαε, προσφθέγγει νιν, ἀνόσιον κάρα ;
ΜΕ. τί γάρ ; φίλου μοι πατρός ἐστιν ἔκγονος.
ΤΤ. κείνου γὰρ ὅδε πέφυκε, τοιοῦτος γεγώς ;
ΜΕ. πέφυκεν· εἰ δὲ δυστυχεῖ, τιμητέος.
ΤΤ. βεβαρβάρωσαι, χρόνιος ὢν ἐν βαρβάροις.
ΜΕ. Ἑλληνικόν τοι τὸν ὁμόθεν τιμᾶν ἀεί.
ΤΤ. καὶ τῶν νόμων γε μὴ πρότερον εἶναι θέλειν.
ΜΕ. πᾶν τοὐξ ἀνάγκης δοῦλόν ἐστ' ἐν τοῖς σοφοῖς.
ΤΤ. κέκτησό νυν σὺ τοῦτ', ἐγὼ δ' οὐ κτήσομαι.
ΜΕ. ὀργὴ γὰρ ἅμα σου καὶ τὸ γῆρας οὐ σοφόν.
ΤΤ. πρὸς τόνδε σοφίας τίς ἂν ἀγὼν ἥκοι πέρι ;
εἰ τὰ καλὰ πᾶσι φανερὰ καὶ τὰ μὴ καλά,
τούτου τίς ἀνδρῶν ἐγένετ' ἀσυνετώτερος,
ὅστις τὸ μὲν δίκαιον οὐκ ἐσκέψατο,
οὐδ' ἦλθεν ἐπὶ τὸν κοινὸν Ἑλλήνων νόμον ;
ἐπεὶ γὰρ ἐξέπνευσεν Ἀγαμέμνων βίον
πληγεὶς θυγατρὸς τῆς ἐμῆς ὑπὲρ κάρα,
αἴσχιστον ἔργον, οὐ γὰρ αἰνέσω ποτέ,
χρῆν αὐτὸν ἐπιθεῖναι μὲν αἵματος δίκην
ὁσίαν διώκοντ', ἐκβαλεῖν τε δωμάτων
μητέρα· τὸ σῶφρόν τ' ἔλαβεν ἂν τῆς συμφορᾶς,
καὶ τοῦ νόμου τ' ἂν εἶχετ' εὐσεβής τ' ἂν ἦν.
νῦν δ' εἰς τὸν αὐτὸν δαίμον' ἦλθε μητέρι.
κακὴν γὰρ αὐτὴν ἐνδίκως ἡγούμενος,
αὐτὸς κακίων γέγονε μητέρα κτανών.

EURIP. *Orest.* 477-506.

Monday, 14th April 1890.—1 *to* 4 *o'clock.*

I. 1. Translate and comment briefly on :—

(*a*) τίς δαίς, τίς δὲ ὅμιλος ὅδ' ἔπλετο ; τίπτε δέ σε χρεώ ;
εἰλαπίνη ἠὲ γάμος ; ἐπεὶ οὐκ ἔρανος τάδε γ' ἐστίν.
(*b*) μὴ μνηστεύσαντες μηδ' ἄλλοθ' ὁμιλήσαντες
ὕστατα καὶ πύματα νῦν ἐνθάδε δειπνήσειαν.
(*c*) αἲ γάρ, Ζεῦ τε πάτερ καὶ Ἀθηναίη καὶ Ἄπολλον,
τοῖος ἐὼν οἷός ἐσσι, τά τε φρονέων ἅ τ' ἐγώ περ,
παῖδα τ' ἐμὴν ἐχέμεν καὶ ἐμὸς γαμβρὸς καλέεσθαι.
(*d*) ἀπὸ στρατείας γάρ νιν ἡμποληκότα
τὰ πλεῖστ' ἀμείνον' εὔφροσιν δεδεγμένη
ὁροίτη περῶντι λουτρὰ κἀπὶ τέρματι
φᾶρος παρεσκήνωσεν.

(*e*) ὁ δ' αὖτέ γ' ἀλκὰν ἔχων
περὶ βρέτει πλεχθεὶς θεᾶς ἀμβρότου
ὑπόδικος θέλει γενέσθαι χερῶν.
(*f*) οὐκ ἔσθ' ὅπως λέξαιμι τὰ ψευδῆ καλά.

2. What are the main arguments for assigning a later date to the *Odyssey* than to the *Iliad*?

3. Discuss the doctrine of the Unities of Time and Place in reference to the plays of Aeschylus.

II. 1. Translate and comment briefly on :—

(*a*) ἔτι δὲ Δῆλος ἐκινήθη ὀλίγον πρὸ τούτων, πρότερον οὔπω σεισθεῖσα ἀφ' οὗ Ἕλληνες μέμνηνται.

(*b*) καὶ ὑμῖν, ὦ Λακεδαιμόνιοι, ἰδίᾳ, ὅτεπερ δὴ μέγιστος φόβος περιέστη τὴν Σπάρτην μετὰ τὸν σεισμὸν τῶν ἐς Ἰθώμην Εἱλώτων ἀποστάντων, τὸ τρίτον μέρος ἡμῶν αὐτῶν ἐξεπέμψαμεν ἐς Ἐπικουρίαν· ὧν οὐκ εἰκὸς ἀμνημονεῖν.

(*c*) καὶ τὴν μὲν Ἀμφίπολιν Βρασίδας ἄρτι εἶχε, τὴν δὲ Ἰώνα παρὰ νύκτα ἐγένετο λαβεῖν· εἰ γὰρ μὴ ἐβοήθησαν αἱ νῆες διὰ τάχους, ἅμα ἕῳ ἂν εἵχετο.

(*d*) τοιοῦτον δὲ τὴν εὐδαιμονίαν οἰόμεθα εἶναι, ἔτι δὲ πάντων αἱρετωτάτην μὴ συναριθμουμένην. συναριθμουμένην γὰρ δῆλον ὡς αἱρετωτέραν μετὰ τοῦ ἐλαχίστου τῶν ἀγαθῶν· ὑπεροχὴ γὰρ ἀγαθῶν γίνεται τὸ προστιθέμενον, ἀγαθῶν δὲ τὸ μεῖζον αἱρετώτερον αἰεί.

(*e*) τελειοῖ δὲ τὴν ἐνέργειαν ἡ ἡδονή. οὐ τὸν αὐτὸν δὲ τρόπον ἥ τε ἡδονὴ τελειοῖ καὶ τὸ αἰσθητόν τε καὶ ἡ αἴσθησις, σπουδαῖα ὄντα, ὥσπερ οὐδ' ἡ ὑγίεια καὶ ὁ ἰατρὸς ὁμοίως αἴτιά ἐστι τοῦ ὑγιαίνειν.

(*f*) φαίνεται δὴ καὶ τὸ ἄλογον διττόν. τὸ μὲν γὰρ φυτικὸν οὐδαμῶς κοινωνεῖ λόγου, τὸ δ' ἐπιθυμητικὸν καὶ ὅλως ὀρεκτικὸν μετέχει πως, ᾗ κατήκοόν ἐστιν αὐτοῦ καὶ πειθαρχικόν.

How is Psychology connected with Ethics in the Aristotelian system?

(*g*) οὐκ ἀπαιτητέον δ' οὐδὲ τὴν αἰτίαν ἐν ἅπασιν ὁμοίως, ἀλλ' ἱκανὸν ἔν τισι τὸ ὅτι δειχθῆναι καλῶς, οἷον καὶ περὶ τὰς ἀρχάς· τὸ δ' ὅτι πρῶτον καὶ ἀρχή· τῶν ἀρχῶν δ' αἱ μὲν ἐπαγωγῇ θεωροῦνται, αἱ δ' αἰσθήσει, αἱ δ' ἐθισμῷ τινί, καὶ ἄλλαι δ' ἄλλως.

(*h*) οἱ δὲ καὶ τὰ μικρὰ καὶ τὰ φανερὰ προσποιούμενοι βαυκοπανοῦργοι λέγονται.—Discuss the reading.

(*i*) (i) παΐζειν δ' ὅπως σπουδάζῃ ὀρθῶς ἔχειν δοκεῖ
(ii) ἀσχολούμεθα ὅπως σχολάζωμεν.

2. Explain the system of chronology adopted by Thucydides in his History.

III. Explain the derivation and forms of—

ὑπερφίαλος—ἔδδεισεν—δαήρ—ἀμῶς—ἔμιγεν—θέρος—ὕππατα (*Lesb.*)—λέκτο—ἀμφορεύς—ὑπόδρα—τριχάικες—εὐρύοπα Ζῆν—ἑκατόν—ἔχεα—ἔασσα (*Dor.*)—βάσκω—χρεών—πεπαθυῖα—ᾗδεα.

luna—miles—peiero—quartus—posco—tenebrae—plcores—facio—cor-

pulentus — itineris — rure — topper — ubi—semel—appellamino—positus —proturbassitur—faxim—torreo.

What do you know of (1) the forms and original uses of the Infinitive in Latin and Greek; (2) the proofs for the existence of *e* and *o* in primitive Indogermanic?

IV. Answer any *two* of the following:—

(*a*) What can be gathered from the *Odyssey* as to Homer's geographical knowledge?

(*b*) Discuss the style and the purpose of the Speeches of Thucydides.

(*c*) In what sense is the unity of moral virtue asserted (i) by Plato, (ii) by Aristotle?

(*d*) State briefly and criticise Aristotle's argument against the position that Pleasure is not a good because it is a κίνησις or γένεσις.

V. Answer any *two* of the following:—

(*a*) Compare the military policy and tactics of the contending states during the earlier part of the Peloponnesian War.

(*b*) Give some account of the state of parties in Athens between 431 and 424 B.C.

(*c*) Compare the influence exerted by the Delphic oracle in the sixth and in the fourth centuries B.C. respectively.

B.—DEPARTMENT OF PHILOSOPHY.

LOGIC, PSYCHOLOGY, AND METAPHYSICS.

FIRST PAPER.

Friday, 11th April 1890—9 *to* 12 *o'clock.*

1. The Province of Logic—how viewed (1) by Hamilton, (2) by J. S. Mill, (3) by Hegel?

2. In what case may the Universal Affirmative proposition (A) and the Particular Negative proposition (O) be converted simply? Give the correct logical inference from "Seest thou a man wise in his own conceit? there is more hope of a fool than of him." Turn the proposition into categorical form, and state its converse, its obverse (permutation), and its contra positive.

3. Enumerate the Categories of Aristotle, and give Aristotle's own interpretation of their meaning. Compare and contrast with the Categories of Kant.

4. Discuss J. S. Mill's view of the function and value of the Syllogism. Also, examine the position that Hypothetical Syllogisms are simply forms of Immediate Inference.

5. Give a brief historical account of the rise and progress of Inductive Logic. How far is Inductive Logic bound up with the Logic of Definition?

6. Bring the following Darwinian argument to the test of Inductive Method and examine :—"Where many cats are, there should be many violets and much red clover. For violets and red clover are dependent on the humble-bee for their fertilization; and humble-bees are scarce where field-mice (which rob their nests) abound, while field-mice are few where cats are plentiful."

7. "The reason why we place any credit in witnesses and historians, is not derived from any *connexion*, which we perceive *à priori*, between testimony and reality, but because we are accustomed to find a conformity between them." Use this text as the basis of an exposition of the nature and rules of Historical evidence.

SECOND PAPER.

Friday, 11*th April* 1890—1 *to* 4 *o'clock.*

1. Is the Mind adequately viewed as an "association of mental atoms"? If not, why not? State any other view that seems to you more conformable to psychological fact. How far, and in what sense, is it true that "psychology depends for its progress on that of the physical sciences"?

2. State and examine the views of Leibnitz and of Locke, respectively, as to the origin of Knowledge.

3. Explain the nature of Philosophical Scepticism, and distinguish its varieties. Examine critically Hume's "sceptical solution of sceptical doubts."

4. Examine critically Locke's "demonstration of the existence of God," and in doing so consider carefully whether it consists with the account he gives of the origin of our ideas and knowledge, [and especially of our ideas of Causality and Power.

5. "Except in abstract truth no judgment rises higher than probability." Explain this, and discuss the statement carefully.

6. Argue the question of the origin and genesis of Space and Time as metaphysical notions.

7. Discuss the problem of an *independent* external world, giving historical references. What element in Berkeley's treatment of this problem may, not inappropriately, be termed Comtist, and why?

8. Trace in detail the Dialectic Method of Plato, and compare it with that of Aristotle. How does it stand related to the Hegelian process?

THIRD PAPER.

Saturday, 12*th April* 1890.—9 *to* 12 *o'clock.*

1. Distinguish, with Descartes, between the Understanding and the Will, and argue the question of the Seat of Error. Enumerate Descartes' proofs of the existence of God, and supplement your exposition with relevant criticisms.

2. What is meant by Infinite? To what ideas is it restricted by Locke, and why? Test the validity of Locke's doctrine by Hegelian standards.

3. Is Kant's Apriorism identical with the doctrine of Innate Ideas? If not, state its precise nature, and support your statement by references to the *Critique of Pure Reason.*

4. "A man must be very sagacious, who could discover by reasoning, that crystal is the effect of heat, and ice of cold, without being previously acquainted with the operations of these qualities." Explain clearly the doctrine of Causation that is implied here. What is the exact bearing of the doctrine of the Conservation of Energy on the metaphysical conception of Causality?

5. Is there any way out of the following conclusion:—"If we take in our hand any volume; of divinity or school metaphysics, for instance; let us ask, *Does it contain any abstract reasoning concerning quantity or number?* No. *Does it contain any experimental reasoning concerning matter of fact and existence?* No. Commit it then to the flames: for it can contain nothing but sophistry and illusion"? Argue the point precisely.

6. "The absolute is not substance but subject." Give a clear exposition of this dictum. Distinguish between Spinoza's "Substance" and Hegel's "Spirit," and show in what respects the doctrine of the latter is an advance upon Kant's teaching.

MORAL PHILOSOPHY.

FIRST PAPER.

Saturday, 12th April 1890.—1 *to* 4 *o'clock.*

Write an Essay, constructive or critical, on

UTILITARIANISM.

SECOND PAPER.

Monday, 14th April 1890.—9 *to* 12 *o'clock.*

1. Define Altruism, and consider it (1) from the side of psychology, (2) from the side of ethics.

Under what circumstances is it conceivable that the Sense of Duty in man may become extinguished? How, in the event of such extinction, would it fare with Virtue and Morality?

2. Is there such a thing as pure Malevolence in human nature? Give reasons for your answer. How would you reply to those who resolve Malevolence into one of these three things:—(1) love of power, (2) love of excitement, (3) sense of injury received?

3. Enumerate the answers that have been given in philosophy to the

question, Why am I obliged to respect the rights of others? Defend the position that appears to you most reasonable. Is the Ethical Imperative correctly rendered in the formula "Do justly"? If not, why not?

4. *Obligation* has been defined as "the indispensableness of using the means if you would attain the end." Show in what sense this definition is adequate, and how (on the supposition of its adequacy) the value of the end is to be determined.

5. Indicate the various aspects under which the Platonic "Idea" may be regarded, and refer each to its appropriate Dialogues. Point out the difficulties attending the determination of the relation between the Platonic Ideas and God, and give the interpretation that seems to you least liable to objection.

6. "While then," says Kant, "they [the Postulates of Pure Practical Reason] do not extend our speculative knowledge, they give objective reality to the ideas of speculative reason in general (by means of their reference to what is practical), and give it a right to concepts the possibility even of which it could not otherwise venture to affirm." Fully explain this, and examine Kant's whole doctrine of the relation between Speculative and Practical Reason.

7. What is meant by the principle of Sufficient Reason? How has it been applied in philosophy? Examine Reid's *critique*.

8. What fresh light, if any, has been thrown upon the question of Free Will by Hamilton's doctrine of the Conditioned?

9. Critically examine the position that desire is "the presentation of an object with which the man for the time identifies himself or his good, and a consequent effort to realise this object," and consider its bearing on a theory of moral life.

10. Consider the position assigned to the Ethical Ideal in Ethical Theories promulgated within the present century.

THIRD PAPER.

Monday, 14*th April* 1890.—1 *to* 4 *o'clock*.

1. Compare the Socratic and the Aristotelic representations of a virtuous life, and consider how these have their roots in the respective systems.

2. Point out any defects that you may find in the mode of working up to a definition of justice in Book I. of Plato's *Republic*. What is the real thing proved at the end of that Book? Enumerate the various forms that Retribution may assume, according to the *Republic;* and show how one can say with truth that it is through fear of retribution that the good are got to become governors in a State.

3. State clearly Aristotle's doctrine of the Will, as laid down in his *Ethics*. How far does this doctrine go towards exhausting the problem of volitional Freedom; and what is its exact philosophical value? Examine Aristotle's doctrine of Friendship, and compare it with the

doctrine of any other philosopher whom you choose. Discriminate between Sympathy and Friendship.

4. Give a handling of Justice, after the manner of Sidgwick. On what grounds may it be maintained that the *generous* character is higher than the strictly just? Why do we condemn Shylock for simply claiming his pound of flesh?

5. Critically examine the proposition, "Quicquid est, in Deo est, et nihil sine Deo esse neque concipi potest." Explain the position "Voluntas et intellectus unum et idem sunt:" defend it against objections, and enunciate its leading consequences.

6. Give Spinoza's analysis of Love and Hatred, and indicate clearly the mutual relations of these two emotions. Point out, also, in what respect Spinoza's Psychology of the Emotions aids his general Ethical theory.

7. Critically examine these positions in Hegel's Ethics:—"Happiness is not a good without right,"—"the Right is not the Good without Happiness." Consider their theoretic relations.

8. Discuss Green's doctrine of the Universal Consciousness—(1) as that consciousness is in itself; (2) as it is in relation to us. Give a clear exposition, with relevant remarks, of the various senses in which the expression "Unity of Self-Consciousness" may be employed.

C.—DEPARTMENT OF MATHEMATICS.

MATHEMATICS.

Friday, 11th April 1890.—9 *to* 12 *o'clock.*

1. The straight line joining any angular point of a right-angled triangle to the middle point of the square on the opposite side is equal and perpendicular to the line joining the middle points of the squares on the two remaining sides.

2. Find the radical centre of the three circles escribed to a triangle, and show that, if α, β, γ be its trilinear co-ordinates,

$$\frac{\alpha a}{b+c}=\frac{\beta b}{c+a}=\frac{\gamma c}{a+b}=\frac{r}{2},$$

where r is the radius of the inscribed circle.

3. If x, y, z be the projections upon the sides of a triangle ABC of a line PQ in its plane, show that the algebraic sum $ax+by+cz=0$, and hence find a symmetrical expression in x, y, z for the square of the distance between the points P and Q.

4. If a, b, c, . . . be n positive integers, show that

$$\Sigma a\,\Sigma\frac{1}{a}>n^2.$$

5. Obtain the expansion of e^x in ascending powers of x, and show that

$$1^n - n2^n + \frac{n(n-1)}{1\cdot 2}3^n - \ \ldots \text{ to } n+1 \text{ terms} = (-1)^n n\,!$$

Sum to n terms the series $\frac{1^2}{1\cdot 3}+\frac{2^2}{3\cdot 5}+\frac{3^2}{5\cdot 7}+\frac{4^2}{7\cdot 9}+\ldots\ldots\ldots$

6. Find the equation of the polar of a point with respect to the circle $x^2+y^2=2ax$.

A series of circles touch a given straight line at a given point. Prove that the locus of the pole of any straight line with respect to the circles is an hyperbola.

7. Given the general equation of a conic in any system of co-ordinates, find the equation of its axes.

Prove that in general only one conic can be drawn through two given points on each co-ordinate axis, and such that one of its axes passes through the origin.

8. The opposite edges of a tetrahedron are a, a'; b, b'; c, c'. Show that the square of the line joining the middle points of any pair of edges a, a' is $\frac{1}{4}(b^2+b'^2+c^2+c'^2-a^2-a'^2)$.

Hence show that if the opposite edges are at right angles, the lines joining their middle points are equal.

9. Find the equation of one of each of the two sets of rectilineal generators of

$$ayz+bzx+cxy+abc=0;$$

and find the locus of the point where the planes through the origin and one of the generators at the point are at right angles.

10. Show that the cone through the origin intersecting the ellipsoid $x^2/a^2+y^2/b^2+z^2/c^2=1$ in the polar plane of $x'y'z'$ is

$$x^2/a^2+y^2/b^2+z^2/c^2=(xx'/a^2+yy'/b^2+zz'/c^2)^2.$$

If tangent planes be drawn at the extremities of three mutually perpendicular diameters, the locus of their intersection is

$$x^2/a^4+y^2/b^4+z^2/c^4=1/a^2+1/b^2+1/c^2.$$

11. Define a rectilineal asymptote, and show how to find the asymptotes of a curve given in Cartesian co-ordinates. Find the asymptotes of $x^2y-ax^2=y^3+ay^2+b^3$ and trace the curve. Write down the equation of a cubic having its asymptotes parallel to those of the given curve and passing through the points $(h_1\ k_1)$, $(h_2\ k_2)$.

12. Investigate the equation $\rho=p+\frac{d^2p}{d\psi^2}$.

If the tangent to a curve at any point be obtained in the form $x\sin\psi - y\cos\psi = f(\psi)$, find the radius of curvature. Apply the method to find the radius of curvature of the ellipse at any point.

13. Show that $\int_0^1 dx\, x^{m-1}(1-x)^{n-1}/(a+x)^{m+n}$ can be expressed by means of Γ-integrals provided m and n be positive.

Evaluate (1) $\int_0^{\frac{\pi}{2}} \log \sin x dx$; (2) $\int_0^{\frac{\pi}{2}} \frac{\sin^4 x dx}{(1+c\cos x)^2}$.

Find the area of the loop of the curve

$$(x^2/a^2+y^2/b^2)^2 = 4xy/c^2.$$

Friday, 11th April 1890.—1 *to* 4 *o'clock.*

1. Cos x being defined in the usual geometrical way for real values of x, establish rigorously the expansion for cos x in powers of x.

Express Exp$(x+yi)$, Log $(x+yi)$, $\cosh^{-1}(x+yi)$ in the form $P+Qi$, with all due generality.

2. Prove Sturm's theorem for delimiting the roots of an equation.

Assign, by any method, rough limits for the real roots of $x^4-6x^3+4x^2-3=0$; and calculate one of them to three places of decimals.

3. When are two point-ranges said to be projective? If I and J' be the critical points on the two ranges, and P and P' any pair of corresponding points, show that $IP.J'P'$ is constant.

Solve the following problems by the methods of projective geometry, if you can, if not, otherwise.

To describe a closed n-gon which shall be circumscribed about one given n-gon and inscribed in another given n-gon. How many solutions are there in general; and under what circumstances are there an infinite number?

P is a point on a parabola whose focus is F and vertex A. M is the projection of P on the directrix: Find the locus of the intersection of FM and AP.

4. Find the condition that the general trilinear equation may represent a pair of straight lines; and deduce expressions for the point of intersection of the line pair.

If a series of conics have four points in common, they have a pair of conjugate directions in common; and the locus of their centres is a hyperbola whose asymptotes are parallel to the common conjugate directions.

5. If Δ be the discriminant of $(abcfgh)(xy1)^2$, then $\Delta/\sin^2\omega$ is an invariant for any transformation which represents a change from one set of oblique axes to another.

Find the Latus Rectum of the conic

$$4x^2-28xy+49y^2+8x-10y+5=0.$$

6. Explain the nature of the Umbilici of a quadric surface. Find

the equation to an ellipsoid when the axis of z is the normal at an umbilicus, and the plane of xy the umbilical tangent plane.

If d be the distance of any point P on the ellipsoid from the Umbilical Normal, p its distance from the umbilical tangent plane, and q its distance from a certain other fixed plane (L), then $d^2=pq$. Show how to construct the plane L, when the principal axes of the ellipsoid are given.

7. Show that the class of a curve of the nth degree which has d double points is $n(n-1)-2d$.

If a non-degenerate curve of the nth degree have a multiple point of the highest possible order, find its class, 1st, when the tangents at this multiple point are all distinct; 2nd, when they are all coincident.

8. Establish Taylor's Theorem for a function of two independent variables. Find, by means of the residue, the condition for the convergency of the expansion of $1/(1-x-y)$ in ascending powers of x and y.

ABC is a triangle whose base is given in magnitude and position, and whose vertex A moves on a fixed straight line. E and F are the feet of the perpendiculars form B and C on the opposite sides: discuss the turning values of EF.

Discuss the stationary values of the function

$$x^2+2xy+y^2+x^6+y^5.$$

9. Find the equation to the evolute of the Catenary: and calculate the area enclosed between the Catenary, the normal at the vertex, a normal inclined to the axis at 45°, and the corresponding arc of the evolute.

10. Reduce the following integrals

$$(\alpha)\ \int dx/\sqrt{(1+\cos x-\sin x)};\ (\beta)\ \int dx(1+e^x)^2/(1+e^x+e^{2x});$$

$$(\gamma)\ \int_0^a dx/(a^2-x^2)^{n/2},\ (n \text{ a positive integer}).$$

11. Show that the integral $\int dz\ z^r(1-z)^s$ can, in general, be made to depend upon another of the same form in which r and s are positive proper fractions. Indicate how the exceptional cases arise; and point out some important classes of integrals which are reducible to the above standard form. How can the numerical evaluation of the above integral be effected when the limits are $z=0$ and $z=1$?

Reduce the following integrals

$$(\alpha)\ \int dx\, x^5/(\log x)^6;\ (\beta)\ \int dx\,(x-1)^3/\sqrt{(x^2+2x+2)}.$$

12. Show how to integrate differential equations of the form $x\phi(p)+y\chi(p)+\psi(p)=0$.

(α) Integrate $p^2+2px^3-4x^2y=0$, and find its singular solution.

(β) Solve the equation $(x^2-1)dy+(y-x^3+x)dx=0$.

(γ) Transform $x^2\frac{d^2y}{dx^2}-2x(1+x)\frac{dy}{dx}+2(1+x)y=x$, into the form $P\frac{d^2z}{dx^2}+Qz=R$; and thus solve the equation.

13. Show how to deduce the singular solution of the equation $\psi(x,y,z,p,q)=0$ from the equation itself.

Illustrate this point, and also the geometrical meaning of the various kinds of solutions by means of the equation

$$a^2p^2+b^2q^2+c^2=(px+qy-z)^2.$$

Solve the equations

(α) $3x^3zp-2x^2yzq+6y^6=0.$

(β) $\dfrac{d^2z}{dx^2}-\dfrac{d^2z}{dy^2}=e^{x+y}.$

NATURAL PHILOSOPHY.

Saturday, 12th April 1890.—9 *to* 12 *o'clock.*

1. Two points are moving with uniform angular velocities in concentric circles in the same plane; determine their relative angular velocity. Hence find the stationary points of two planets whose orbits are supposed to be circular and in the same plane, and whose angular velocities are uniform, and are defined by Kepler's third law.

2. A particle moves under gravity in a uniform medium whose resistance varies as the velocity. Prove that the hodograph of its path is a straight line, and hence determine the inclination to the horizon of the particle's motion when its speed is least.

3. Prove that the polar equation of the path of a particle moving freely under the action of a central force μu^n is

$$\frac{d^2u}{d\theta^2}+u=\frac{\mu}{h^2}u^{n-3}.$$

Prove that when $n=3$ there cannot be more than one apsidal distance.

4. A cannon-ball attached to one end of a uniform chain of unlimited length is projected vertically upwards with a given velocity and draws the chain up gradually with it. Determine how high it will rise, neglecting the resistance of the air.

5. Two uniform unequal planks, hinged together at one extremity, rest in a vertical plane on a rough cylinder whose axis is horizontal. Determine the limiting positions of equilibrium of the planks as their common extremity is moved up and down a vertical line through the axis of the cylinder.

6. Find the attraction of a circular plate of uniform thickness and density on an external particle of unit mass in its plane, the law of the attraction being that of the inverse distance.

7. Show that the amount of work done by the mutual attractive forces of the particles of a self-attracting system in changing from one configuration to another is $\frac{1}{2}\int V dm$; the integral extending over the whole

system in its first and second configurations, and the first result being substracted from the second.

Apply the result to a homogeneous sphere whose particles were originally at an infinite distance apart.

8. If a homogeneous elastic isotropic solid be subjected to a simple longitudinal stress P per unit area, prove that there is a linear elongation in the direction of the stress equal to $P\left(\frac{1}{6n}+\frac{1}{9k}\right)$, and a linear contraction in all directions perpendicular to the stress equal to $P\left(\frac{1}{6n}-\frac{1}{9k}\right)$, where n and $\frac{1}{k}$ represent the "rigidity" and "compressibility" of the solid respectively.

9. A uniform rod is suspended horizontally by two vertical fibres of equal length attached to its extremities. Calculate by means of Lagrange's Equations, or otherwise, the time of its small oscillations under gravity, (1) in a vertical plane, (2) about a vertical axis through its middle point.

10. Compare the times of descent down a perfectly rough inclined plane of a uniform sphere, and of a thin hollow spherical shell of the same mass and radius.

11. A chain lying at rest in a given curve on a horizontal plane is acted on by a given tangential impulse at one extremity. Show that the whole kinetic energy generated by the impulse is a maximum for the free motion of the chain.

12. Interpret the thermodynamic equation

$$dE = td\phi - pdv.$$

In a perfect gas the temperature changes from t to t', and the volume from v to v', show that the change of the function ϕ is $c \log\frac{t}{t'} + (k-c) \log\frac{v}{v'}$, where c and k are the specific heats at constant volume and pressure.

Saturday, 12th April 1890.—1 *to* 4 *o'clock.*

1. Investigate the composition of two simple harmonic disturbances, of the same period, in one line. Show how to extend the result to periods nearly equal.

On these results base the explanation of standing waves, and of the periodic differences of amplitude of successive sea-waves running up a sloping beach.

2. Investigate the law of composition of simultaneous rotations of a rigid body about axes passing through one point.

Extend your result to axes anyhow situated in the body; and, in this case, find the conditions that the motion shall be translatory only.

3. Given the expressions for the displacement of each point of a body, show how to find the consequent compression and rotation of any small portion.

What conditions, if any, are, (virtually), assumed in your investigation?

4. Find the surface of zero-potential for two electrified points 1 and $-e$. Hence, by elementary methods, find the induced electrification of an uninsulated sphere, when unit of positive electricity is placed (*a*) at an external, (*b*) at an internal, point.

5. Find the shortest length which a uniform piece of chain can have, so that it may rest in equilibrium on two smooth, parallel rails at the same level.

6. Form the general equations of equilibrium of a fluid under any forces.

What is the condition to be satisfied, in order that equilibrium may be possible, (*a*) by the forces, when the density is given; (*b*) by the density, when the forces are given? Are these conditions always necessary? Explain your answer.

7. Define the moment of inertia of a body about any axis, and show how to find it from that about a parallel axis through the centre of inertia.

Hence find the positions (*a*) of all axes, equidistant from the centre of inertia, about which the moments of inertia have a given value, (*b*) of all axes about which they have that value.

8. If one point of a plane lamina, moving in its plane, be suddenly fixed; find the impulse at the point and the subsequent motion.

9. Form, generally, the equations of motion of a chain; and limit them to the special case when the chain hangs nearly vertical, supporting a given mass.

Investigate the small transverse oscillations in this case.

10. Calculate the speed of propagation of plane waves of sound, giving the necessary thermo-dynamic part of the investigation.

11. Form the equation for the equipotential and current lines in a uniform conducting plate, which is connected, at given points, with bodies maintained at different potentials.

12. Form the equation for the linear conduction of heat in an isotropic body, and solve it for the special case of an infinite solid bounded by a plane whose temperature undergoes a simple harmonic change.

13. A given quantity of heat is suddenly communicated to one point of an infinite solid, whose temperature is everywhere v_0; find the motivity of the system at any future time.

Bursaries, Prizes, Scholarships, and Fellowships in Arts.

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I.—BURSARIES.

No. of Foundation.	Year of Found.	Name of Founder.	Total Annual Income.	No. of Bursars.	For Years.	Annual Allowance to each Bursar.	Patrons.
			At present				
I.	16—	George Heriot.	£210 0 0	7	3	£30 0 0	Governors of George Heriot's Trust.
		Do. High School University Bursaries.	270 0 0	9	3	30 0 0	Do.
II.	16—	Do. For Young Men leaving Heriot's Hospital.	Regulated by No. of Candidates.	10	4	30 0 0	Do.
III.	1619	Archibald Johnston, Merchant in Edin.	11 2 2	1	4	11 2 2	Earl of Haddington.
IV.	1622	John Trotter of Mortonhall.	4 10 1	1	4	4 10 1	Trotter of Mortonhall.
V.	1626 1629 1640	Hugh Wight and David M'Call.	4 14 5	1	4	4 14 5	Town Council and Louis of Plean, two choices alternately.
VI.	1639	Dr Robt. Johnstone of London.	25 0 0	2	4	12 10 0	Johnstone of Annandale.
VII.	1639	Do. do.	25 0 0	2	4	12 10 0	Town Council.
VIII.	1642 1653	Mausie Weir, relict of R. Dobie, Mer., & Dean of Guild of Edin., and D. Jenkins, Mer., Edin.	5 11 1	1	4	5 11 1	Town Council.
IX.	1644	Jas. Dalgliesh, Merchant, Edin.	11 2 2	1	4	11 2 2	Do.
X.	1673	Jn. M'Morran, Merchant.	2 15 6	1	4	2 15 6	Do.
XI.	1678	John Penman, Bailie and Merchant, Edinburgh.	14 15 0	1	4	14 15 0	Society for the Benefit of the Sons of the Clergy.
XII.	1678	Hector Ford of Branxton.	33 6 6	3	4	11 2 2	Town Council.
XIII.	1687	Sir Andrew Ramsay of Abbotshall.	11 2 2	1	4	11 2 2	Do. and Ministers of Edinburgh.
XIV.	1696	Hepburn and Lightbody.	5 16 8	1	4	5 16 8	Town Council and Campbell of Aberuchill, alternately.
XV.	1698	Ad. Chrystie, Under Clerk of Session.	18 0 0	1	4	18 0 0	Faculty of Advocates.
XVI.	1702	Thos. Bryson, Bailie and Merchant in Dunbar.	c 0 0	2	4	5 0 0	Ministers of the Presbytery of Dunbar.
XVII.	1703	James Pringle of Torwoodlee.	6 7 9	1	4	6 7 9	Pringle of Torwoodlee.

No. of Foundation.	Year of Found.	Name of Founder.	Total Annual Income.	No. of Bursars.	For Years.	Annual Allowance to each Bursar.	Patrons.
XVIII.	1714	Rev. Robert Brown, of Protestant Consistory at Zamose.	£25 0 0	2	4	{ 15 0 0 10 0 0	Town Council.
XIX.	1723	Alexander Mitchell, W.S.	8 6 8	1	4	8 6 8	Livingston Learmonth of Parkhall.
XX.	1725	William Wardrope, Litster, Edinburgh.	5 11 1	1	4	5 11 1	J. C. Wardrop, W.S., 82 Princes St., Edin.
XXI.	1726	David Christie, Wigmaker, Edinburgh.	8 6 8 About	1	4	£8 6 8 About	Town Council.
XXII.	1734	Laurence Dundas, Professor of Humanity in the University of Edin.	44 0 0	2	4	22 0 0	Jas. Dundas of Dundas, Robt. Dundas of Arniston, and Dundas of Carronhall, by turns.
XXIII.	1764 1766	Rev. J. Penman, Min. of Bothkenner.	5 8 0	1	4	5 8 0	Gilmour of Craigmillar.
XXIV.	1768	Thos. Fraser, Clerk in the office of City Clerk, Edinburgh.	36 0 0	2	7	18 0 0	The Provost, Dean of Guild, and Treasurer of Edin.
XXV.	1778	Jas. Shortt, Optician, Edinburgh.	9 0 0	1	4	9 0 0	Earl of Morton.
XXVI.	1784	William Hume, Eastbarns, Dunbar.	16 0 0	2	4	8 0 0	Ministers of the Presbytery of Dunbar.
XXVII.	1784	Rev. Jas. Millar and Spouse.	24 0 0	1	4	24 0 0	Kirk-Session of Kippen.
XXVIII.	1809	Dr Donald Grant of London Street, St Pancras, London.	180 0 0	2	4	90 0 0	Earl of Seafield, and James Mackenzie, W.S., as Dr Grant's Trus.; whom failing, Sen. Acad.
XXIX.	1810	Rev. James Stewart.	30 0 0 About	3	3	10 0 0 About	Senatus Academicus.
XXX.	1821	Sir J. M'Pherson.	85 17 4	2	2	42 18 8 About	Senatus Academicus.
XXXI.	1837	James Menzies	200 0 0	4	4	45 0 0	Sir R. Menzies, Bart., & Ministers of Dull, Weem, & Fortingall
XXXII.	1838	Robert Blair, D.D., Barton St Andrews, Norfolk.	10 0 0	1	3	10 0 0	Principal, and Profs. of Latin, Greek, Mathematics, Logic & Metaphysics, and Moral Philosophy.
XXXIII.	1846	John Jamieson, Esq., Edinburgh.	About 26 0 0	1	4	About 26 0 0	Principal, & two Profs. of the University.
XXXIV.	1846	G. P. Bidder, C.E.	43 12 0	1	4	43 12 0	Senatus Academicus.
XXXV.	1852	Wm. Lennie, Esq.	48 0 0	4	4	12 0 0	Town Council.
XXXVI.	1853	John Bruce, Esq. Trinity Crescent, Edinburgh.	160 0 0	{ 1 4 { 4 4		40 0 0 30 0 0	} Do.
XXXVII.	1858	M'Diarmid Trustees.	10 0 0	1	3	10 0 0	Senatus Academicus.
XXXVIII.	1860	Wm. Patrick, Esq., of Roughwood.	About 120 0 0	1	2	About £80 „ £40	Principal and Professors in Arts.
XXXIX.	1858	Edin. Ayrshire Club.	50 0 0	2	2	£25 0 0	Edin. Ayrshire Club.
XL.	1863	Peeblesshire Society.	45 0 0	3	4	{ 10 0 0 20 0 0	Peeblesshire Society.

No. of Foundation.	Year of Found.	Name of Founder.	Total Annual Income.	No. of Bursars.	For Years.	Annual Allowance to each Bursar.	Patrons.
XLI.	1864	Ed. Galloway Asso.					Ed. Galloway Asso.
XLII.	1864	Ed. Caithness Asso.	£10 0 0 Interest of	1	4	£10 0 0 About	Ed. Caithness Asso.
XLIII.	1864	A. H. Rhind of Sibster.	500 0 0	1	4	20 0 0	Edin. Caithness Asso.
XLIV.	1865	Mrs Margt. Tyndall Bruce, of Falkland.	165 0 0	3 3	3 3	35 0 0 20 0 0	Senatus.
XLV.	1865	Horsliehill Scott.	76 17 6	2	2	38 8 9	Do.
XLVI.	1867	Miss Hannah Harrison, of Lasswade.	34 13 8	1	2	34 13 8	Do.
XLVII.	1867	Rev. John Spence.	About 190 0 0	4 1	2 1	1st Year 30 0 0 2nd Year 40 0 0 50 0 0	Governors of the Spence Bursary Trust.
XLVIII.	1869 1872	Edin. Border Counties Association.	50 0 0	1 1	4 4	30 0 0 20 0 0 About	Edinburgh Border Counties Assoc.
XLIX.	1869	Argyllshire, Bute, and Western Isles Asso.	12 0 0	1	4	12 0 0	Argyllshire Association.
L.	1870	Stewart of Ardvorlich.	16 0 0 About	1	4	16 0 0 About	Proprietor of the Estate of Ardvorlich.
LI.	1870	David Cowan.	35 0 0 About	1	2	35 0 0	Directors of Ayr Academy.
LII.	1871	J. Robertson Sibbald.	150 0 0	5	4	30 0 0	Tr. of Dr J. R. Sibbald.
LIII.	1872	Angus Club.	25 0 0 About	1	4	25 0 0 About	Angus Club.
LIV.	1873	Earl of Zetland.	40 0 0	1	3	40 0 0	Trustees of Earl of Zetland.
LV.	1873	The Grierson Trus.	104 0 0	4 1	4 4	20 0 0 26 0 0	Senatus Acad.
LVI.	1874	Upper Ward of Lanarkshire.	20 0 0	2	4	20 0 0	Upper Ward Assoc.
LVII.	1874	Johnstone of Harthope.	18 15 0 About	1	4	18 15 0 About	Senatus Acad.
LVIII.	1874	James Lambert.	40 0 0	1	4	40 0 0	Senatus.
LIX.	1874	Fife, Clackmannan, and Kinross Assoc.	15 0 0	1	4	15 0 0	Fife, &c., Assoc.
LX.	1875	Robert Marshall.	37 10 0	1	4	37 10 0	Senatus Acad.
LXI.	1876	J. Fothringham of Heathpool.	37 10 0 About	2	4	18 15 0	Senatus Acad.
LXII.	1877	Earl of Zetland.	40 0 0	1	3	40 0 0	Trustees.
LXIII.	1878	Edin. E. Lothian Asso.	20 0 0	1	3	20 0 0	Association.
LXIV.	1878	Edin. University Endowment Asso.	120 0 0	6	3	20 0 0	Senatus Academicus.
LXV.	1878	Jas. Gillan.	105 0 0	3	3	35 0 0	Trustees of J. Gillan.
LXVI.	1878	Dr Andrew Thomson.	100 0 0 About	4	4	25 0 0 About	Trus. of Dr Thomson.
LXVII.	1880	Rev. John Patterson	20 0 0	1	4	20 0 0	Senatus Academicus.
LXVIII.	1880	High. and Agri. Soc.	200 0 0	10	1	20 0 0	Highland Society.
LXIX.	1881	Thomas Carlyle.	About £160	8	4	20 0 0	Senatus Acad.
LXX.	1883	Subscribers to Mackinnon Testimonial	£56 5 0	3	3	18 15 0	Senatus Acad.
LXXI.	1882	James Whitelaw.	66 18 10	3	3	22 6 4	Senatus Acad.

No. of Foundation.	Year of Found.	Name of Founder.	Total Annual Income.	No. of Bursars.	For Years.	Annual Allowance to each Bursar.	Patrons.
LXXII.	1883	William Renton, 20 Royal Ter., Edin.	£19 19 6	1	1	£19 9 6	Profs. Chrystal, Tait, Crum Brown, and Nicholson.
LXXIII.	1883	Isabella Macdougall	About 120 4 3	4	3	About 30 0 0	Trustees.
LXXIV.	1886	Rob. P. Newton of Castlandhill.	About 83 16 8	4	2	About 20 19 2	Senatus Academicus.
LXXV.	1886	Pet. C. Mann of Nairn and Durham.	About 80 0 0	3	3	About 26 13 4	Senatus Academicus.
LXXVI.	1886	Richd. Allan, Feuar, Kelso.	90 0 0	3	3	About 30 0 0	Trustees of R. Allan.
LXXVII.	1887	Mrs Kidd of Aigbarth, near Liverpool.	About 33 9 4	1	4	About 33 9 4	Senatus Academicus.
LXXVIII.	1887	Charles Jardine of Thorlieshope.	About 135 0 0	4	4	About 33 15 0	Senatus Academicus.
LXXIX.	1888	Mrs Harriet E. Morrison.	About 24 0 0	1	4	About 24 0 0	Senatus Academicus.
LXXX.	1889	Daniel Maclaurin, London.	About 70 0 0	1	4	About 70 0 0	Town Council.
LXXXI.	1889	James Simson, Edinburgh.	200 0 0	8	4	25 0 0	Presbytery of Edinburgh.

Conditions of Foundations and Names of Bursars.

I. These *Heriot Bursaries* are for Students unconnected with the Hospital, entering upon a regular Curriculum in Arts or Science with a view to graduation. (For remodelled scheme, see CALENDAR, 1887-88, p. 498.) *Bursars*—1887, John Turner, George Frederick Cairns, Frederick J. Thomson. 1888, J. A. Christie, John Bowie. 1889, Robert Samson, Franklin Ross.

Do., High School University Bursaries. These are awarded by competitive examination among Scholars attending the High School, Edinburgh, and may be held at any University approved by the Governors. *Bursars*—1886, Hugh Macmichael, Albert Zoutman. 1887, H. H. Murray, W. D. Macdougall, Alexander M'Tavish. 1888, Neil Macmichael. 1889, John A. Scott.

II. *Do.* Young men who, upon leaving Heriot's Hospital, are, after examination, declared hopeful scholars, and fit to follow any of the liberal professions, are entitled to a Bursary of £30 a-year for four years, with a view to attendance on the regular course in Arts, with a view to the degree of M.A. *Bursars*—John W. Whitecross, Robert Rintoul, Alex. Baxter, Peter F. Gillies, Charles Stewart, Robert Somerville.

III. *A. Johnston Bursary.*—Each Bursar is entitled to hold this Bursary for four years, subject to the conditions that he shall pass such examination as may be required of Presentation Bursars, and shall proceed through the Curriculum in Arts, and pass the Departmental Examinations for M.A. appropriate to each year. No one is permitted to hold the Bursary along with any other Bursary in the University.

The Bursar must attend the Classes in the Arts Curriculum. *Bursar*—1887, Gordon C. Pringle.

IV. *Trotter Bursary.* This Bursary is held under the same conditions as No. III. *Bursar*—1886, Roger S. Davidson.

V. *Wight and M'Call Bursary.* This Bursary is held under the same conditions as No. III. *Bursar*—1887, William Robb.

VI. and VII. *R. Johnstone Bursaries.*—By Ordinance No. 82, the holder of each of the four Robert Johnstone Bursaries is entitled to hold his Bursary for four years, subject to the condition that he shall pass such entrance examination as may be required of Presentation Bursars, and shall proceed through the Curriculum in Arts, and regularly pass the Departmental Examinations required of Students proceeding to the degree of M.A. No person is allowed to hold any of these Bursaries along with any other Bursary in the University. *Bursars*—W. J. Street, John Stevenson.

VIII. *Weir and Jenkins Bursary.*—For a Student in Arts, who must follow the Curriculum for the Degree of M.A. *Bursar*—David G. Hamilton.

IX. The *Dalgliesh* Bursar is entitled to hold the Bursary for four years, subject to the condition that he shall pass such entrance examination as may be required of Presentation Bursars, and shall proceed through the Curriculum in Arts in the University, and regularly pass the Departmental Examinations required of Students proceeding to the Degree of M.A. No person is allowed to hold the Bursary along with any other Bursary in the University. *Bursar*—Thomas Linton.

X. *M'Morran Bursary.*—This Bursary is for a "Student of Philosophy" in the Arts Curriculum. *Bursar*—William Robb.

XI. *Penman* Bursar.—The Bursar must attend the Classes in the Arts Curriculum. *Bursar*—

XII. Each *Ford* Bursar is entitled to hold his Bursary for four years, subject to the condition that he shall pass such entrance examination as may be required of Presentation Bursars, and shall proceed through the Curriculum in Arts, and regularly pass the Departmental Examinations required of Students proceeding to the Degree of M.A. No person is permitted to hold any of the Bursaries along with any other Bursary in the University. *Bursars*—D. R. Scott, John Brown, A. Keith Campbell.

XIII. The *Sir A. Ramsay* Bursar holds his Bursary for four years, subject to the condition that he shall pass such entrance examination as may be required of Presentation Bursars, and shall proceed through the Curriculum in Arts, and regularly pass the Departmental Examinations required of Students proceeding to the degree of M.A. No person is permitted to hold either of the Bursaries along with any other Bursary, Fellowship, or Scholarship of any Scottish University. *Bursar*—Charles Ramsay.

XIV. The *Hepburn and Lightbody Bursary* was founded by Sir Colin Campbell, Lord Aberuchill, and Sir Patrick Aikenhead, as executors of Sir Patrick Hepburn of Blackcastle. It is for a Student of Philosophy who follows the Curriculum in Arts. *Bursar*—William Stoddart.

XV. The *Chrystie Bursary* is usually held for four years. The Bursar is taken

bound to attend "the usual classes," and must produce yearly to the Faculty certificates from the respective Professors of his due attendance, and the diligent prosecution of his studies. Candidates are referred for information to the Clerk to the Faculty of Advocates, Advocates' Library. *Bursar*—1888, James William Robertson.

XVI. The *Bryson* Bursars are first to enter the Humanity class: afterwards they are to pass through the rest of the classes in Arts until their Laureation; at which time, if judged by the ministers of the Presbytery of Dunbar fit for the study of Theology, they may continue for two years in Theology. *Bursar*—

XVII. The *Pringle Bursary* was founded by James Pringle of Torwoodlee for a Bursar in Philosophy and Divinity, who must attend the classes in the Curriculum in Arts for M.A. *Bursar*—David Waterston.

XVIII. The *Brown Bursaries* are payable to Bursars in the regular course of study in Arts for M.A. *Bursars*—Duncan Urquhart, D. Menzies.

XIX. The *Mitchell Bursary* is payable to a student during a regular course of four years in the Faculty of Arts for M.A., and during two years (if the Patron think fit) at the Divinity Classes. *Bursar*—1887, J. D. F. Gilchrist.

XX. The *Wardrope Bursary* is for the maintenance and support of a Bursar of Philosophy in the University. *Bursar*—J. D. F. Gilchrist.

XXI. This *Christie Bursary* may be held by a Student during a regular course of four years in the Faculty of Arts for M.A. *Bursar*—John M. Dalziel.

XXII. *Dundas Bursaries.*—The Patrons are directed to prefer the Mortifier's near relations; failing such, those of the surname of Dundas; and failing such, any other persons at their discretion. By Ordinance No. 78 of the Universities' Commissioners, each person presented to either of the Dundas Bursaries is entitled to hold the same for four years as a Student of Arts, subject to the condition that he shall pass such entrance examination as may be required of Presentation Bursars, and shall proceed through the Curriculum in Arts, and shall regularly pass the Departmental Examinations required for M.A. *Bursars*—1886, Robert M'Intosh; 1888, A. B. Macaulay.

XXIII. The *Penman Bursary* is payable to a "Student of Philosophy" for the period of four years in the Curriculum of Arts. *Bursar*—

XXIV. The *Fraser Bursaries* are for maintaining two Students of the name of Fraser, till they finish their course and take the Degree in the Faculty of Arts, and for three years thereafter; they making their election whether to follow Divinity, Law, or Medicine. Two Classes at least must be attended each winter Session. Candidates should apply to the City Clerk, Council Chambers, Edinburgh. *Bursar*—1882, Duncan Fraser; 1886, John Fraser.

XXV. The primary object of the *Shortt Mortification* is the establishment of a Bursary for Mathematics. The Bursar must attend the Classes in the Curriculum in Arts. *Bursar*—1886, John Hunter.

XXVI. The conditions of the *Hume Mortification* correspond with those of Bryson's, No. XVI., and the presentations and payments are made as in that case. *Bursar*—David Hislop.

XXVII. *Millar Bursary.*—To be held by a Student intended for the Ministry in the Church of Scotland, during his Curriculum in the Faculty of Arts. *Bursar*—1885, John Gray.

XXVIII. The *Grant Mortification* is for Students of the University of Edinburgh, of the name of Grant. The holders may attend the Arts, Medical, Divinity, or Law Classes. Application for information may be made to Messrs Mackenzie, Innes, & Logan, W.S., 23 Queen Street, Edinburgh. *Bursars*—*Vacant.*

XXIX. *Stewart Bursaries.*—Candidates must be in the *second* year of attendance in the Curriculum of Arts. Bursars must attend Logic and the other Classes usually attended in that year, with a view to the Degree in Arts. *Bursars*—1887, W. G. Wedderspoon; 1888, R. M'Kerron. *Lapsed Bursary*—Robert Mackintosh; 1889, James Burnet.

XXX. The *Macpherson Bursaries* are for the benefit of Students who are natives of the Highlands. They are bestowed on Students at the commencement of the *third* year of the regular course in Arts, with a view to the Degree of M.A., and are tenable for two years, during which the Bursars must attend Classes in the Curriculum of Arts. Candidates must have a knowledge of Gaelic. *Bursars*—1888, Hugh Macmichael; 1889, M. Macinnes; *Lapsed Bursary*, John Forbes for one year.

XXXI. *Menzies.*—These Bursaries, four in number, were founded in 1837, by James Menzies, Esq., Glasgow. They are of the annual value of £45 each, but vary in amount at discretion of the patrons, and tenable for four years, in any one of the Universities of St Andrews, Glasgow, or Edinburgh. Preference first to the relations of the Founder, next, to the name of Menzies; failing whom, to persons born on the estate of Sir Robert Menzies, Bart., within the parishes of Dull, Weem, and Fortingall; failing whom, any Student who shall be found best qualified may be appointed.

XXXII. The *Blair* Bursar must attend the Classes in the required order, and pass the Departmental Examinations necessary for the Degree of M.A. *Bursar*—1889, William Brander.

XXXIII. The *Jamieson Bursary* is for the benefit of the sons of schoolmasters, farmers, mechanics, and labourers, and other persons born and residing within any one of the following parishes—viz., Crawfordjohn, Crawford, united parishes of Lamington and Wandell, united parishes of Wiston and Roberton, Culter and Biggar. The Bursar may attend Classes in any of the Faculties. *Bursar*—1889, Andrew Rae.

XXXIV. Called the "*Jardine Bursary*," being founded by Mr Bidder, C.E., as a memorial of the munificence of Sir Henry Jardine to him, to which he owed the advantage of his education at the University of Edinburgh. Candidates must be natives of Scotland. The Bursar must attend the Classes, and pass the Departmental Examinations necessary for the Degree in Arts. *Bursar*—1888, Hugh R. Mackintosh.

XXXV. *Lennie Bursaries.*—Bursars must attend the Classes in the Arts Curriculum. Candidates should apply to the City Clerk, Council Chambers, Edin-

burgh. *Bursars*—James Stobie, James Mackenna, James L. Munro, James Wood.

XXXVI. *Bruce Bursaries.*—Prior to the commencement of each Winter Session, five Students are presented yearly, the most distinguished of the five receiving the £40 Bursary. The Bursars must be in regular attendance on the Classes necessary for the Degree of Master of Arts. Candidates announce their names at the Council Chambers to the City Clerk. *Bursars*—John Davidson, W. J. Pennell, James L. Linton, R. Burnett, Angus Macdonald, Laurence Ker.

XXXVII. The *M'Diarmid Bursary* is a memorial of the late John M'Diarmid, Esq., Editor of the *Dumfries and Galloway Courier*. Candidates must be natives of the county of Dumfries or the stewartry of Kirkcudbright. The Bursar must attend the Classes and Examinations necessary for the Degree of Master of Arts. Applications regarding the Bursary to be made to "H. Gordon, Esq., Dumfries." *Bursar*—1888, John W. Geddes; 1889, W. H. Carse.

XXXVIII. The *Patrick Bursaries* are for the assistance of those who have completed a course of education at any of the public schools or academies in the county of Ayr, where a course of Classical Study is pursued, and who are in a condition to apply for admission into the University. Their value fluctuates, being, for the first, two-thirds of the dividend on £3000 Glasgow and South-Western Railway Stock; and for the second, the remaining third of said dividend. The Bursars must attend the Classes and Examinations necessary for the Degree in Arts, in the order required by the Faculty. *See* p. 197 of CALENDAR for 1865-66. *Bursars*—1888, 1st, Robert Lees; 2nd, W. A. Stephen.

XXXIX. *Ayrshire Club Bursaries.*—Awarded after competitive examination to natives of Ayrshire requiring aid, and tenable during the Curriculum in Arts, on condition of regular attendance at the Classes, with a view to the Degree. Information will be afforded by the Secretary of the Club, Mr A. H. Cooper, W.S., 8 S. Charlotte Street. *Bursar*—1889, Hugh Reid.

XL. *Peeblesshire Bursaries.* — Candidates must be natives of Peeblesshire, must have been educated within the county, and must pursue the Curriculum of Arts, at this University, with a view to the degree in Arts. A bursary of £20 is given by the Society; one of £10 by Mr Tod of St Mary's Mount, the latter tenable in any Scottish University. Apply to the Secretary of the Society, Mr James Stirling, 27 East Claremont Street. *Bursar*—Archibald B. Clark. *Mr Tod's—Vacant.*

XLI. *Galloway Bursary.*—Discontinued for the present.

XLII. and XLIII. *Caithness and Rhind Bursaries.*—Bursars must attend Classes in Arts Curriculum. Apply to Secretary of the Association. *Bursar*—1887, Frank W. Nicolson.

XLIV. *Bruce of Grangehill and Falkland's Bursaries.*—Three of these Bursaries, of the annual value of £35, are awarded after competitive examination to Students of the *second* year in their course of study for a Degree in Arts; and three others, of the annual value of £20, to Students entering the *first* year of the Arts Curriculum. *Bursars*—First year, 1887, R. Cochrane; 1888, first year,

A. J. Campbell; second year; J. A. Norrie; 1889, first year, D. G. Hamilton; second year, Thomas M'Vey.

XLV. *Horsliehill-Scott Bursaries.*—Annual value £35 to £41, under deduction of £6, 6s. for Examiners' fees from first year's payments. Open to Students in the *third* year of their course for a Degree in Arts, and tenable for two years. The examination is in Classics, Mathematics, and Logic and Metaphysics. Deed of Foundation, at p. 208 of CALENDAR for 1866-67. *Bursars*—1888, Henry Barker; 1889, James Mitchell.

XLVI. The *Harrison Bursary* is of the annual value of £32, under deduction of £6, 6s. of Examiners' fees from first year's payments. Open to Students in the *third* year of their course in the Faculty of Arts, with a view to a degree, and is tenable for two years. It is to be awarded to the competitor who shall show the greatest proficiency in Classics, Mathematics, and Logic and Metaphysics. *See* Deed of Endowment, p. 231 of CALENDAR for 1867-68. *Bursar*—1889, R. G. M'Kerron.

XLVII. *Spence Bursaries.*—By the regulations of the Governors, two Bursaries, each of the annual value of £30 for the first year and £40 for second year of tenure, are open only to Students who have studied in the University of Edinburgh, at the commencement of their second session in a three years' curriculum, or of their third session in a curriculum of four years. Examination in Latin, Greek, Mathematics, and British History. Governors may award to any Bursar who has graduated or passed all the examinations for a Degree in Arts, a Bursary of £50 for one year, tenable in any of the other Faculties. See Scheme, p. 520 of CALENDAR 1889-90. Candidates apply to Messrs A. & H. Patullo, Writers, 11 Bank Street, Dundee, for particulars.

XLVIII. *Border Counties and Sir Walter Scott Bursaries.*—Candidates must be natives of the counties of Roxburgh, Berwick, or Selkirk, and must attend the classes necessary for a Degree in Arts. Application to be made to Mr T. Usher, Sheriff Court House, Edinburgh. *Sir W. Scott Bursar*—1889, John Henderson. *Border Counties Bursar*—1887, William Fulton.

XLIX. *Argyllshire Bursary.*—To be held by natives of Argyllshire, Bute, or Western Islands. The holder must attend the classes necessary for a Degree in Arts. Application may be made to Donald Beith, Esq., W.S., 43 Castle Street, Edinburgh. *Bursar*—1889, Charles Macdonald.

L. *Ardvorlich Bursary.*—Open to Students of Arts, natives of the parishes of Comrie, Balquhidder, Callander, or Killin, failing whom, to natives of Perthshire, and failing such, to the best qualified candidate. The holder must attend Arts or Science classes. Application to be made to the Clerk of Senatus. For remodelled Foundation, see CALENDAR 1887-88, p. 501; for original deed, see p. 275 of CALENDAR for 1870-71. *Bursar*—1886, John Ferguson.

LI. *Cowan Bursary.*—Candidates must be about to enter the Curriculum in Arts. Information will be afforded by W. F. M'Cubbin, Esq., Ayr. *Bursar*—*Vacant.*

LII. *Sibbald Bursaries.*—The Bursaries are available to Students in the Faculties of Arts, Medicine, Law, or Divinity, and are open to Students entering

the University who have not previously attended any University in the United Kingdom or elsewhere, *and who do not hold any other Bursary or Scholarship;* but no objection to a Candidate that he has, during the previous Summer Session, attended any of the Classes in the University of Edinburgh required by the Faculties of Medicine or Law. See CALENDAR for 1888-89, pp. 171 and 177. Application to be made to Messrs Mackenzie, Innes, & Logan, W.S., 23 Queen Street, Edinburgh. *Bursars*—1887, John R. Currie, Hugh Gordon. 1888, Philip H. Hanson, David S. Crichton; 1889, Gavin Grey.

LIII. *The Angus Club Bursary.*—Open to Forfarshire students entering the University for the first time. Application should be made to the Secretary of the Club, Mr J. S. M'Laren, S.S.C., 11 Hill Street. *Bursar*—1888, David Hird.

LIV. *Orkney and Zetland Bursary.*—Open to first year's Students (male or female), natives, or children of parents who are natives of the County of Orkney and Zetland. It is tenable for three years. The Bursar must attend the Classes in the Curriculum in Arts, with a view to a Degree. Applications to be sent to Messrs H. G. & S. Dickson, W.S., 12 Castle Terrace, Edinburgh. The Deed of Foundation will be found in CALENDAR for 1873-74, p. 329. *Bursar*—1889, Edwin Rogerson.

LV. *Grierson Bursaries.*—Four Bursaries of £20 each, and one of £26, awarded annually in November, under the patronage of the Senatus. They are restricted in the first place to natives of either of the parishes of Crawford or Leadhills, who must pass an examination, satisfactory to the Senatus, in Elementary Latin, English, and Arithmetic. In the event of more than one preferential Candidate, the examination is competitive among such candidates. If no preferential Candidates, the Bursaries are thrown open for competition to all Students then intending to enrol in the University for the First Session of the Curriculum in Arts, the subjects of examination being those prescribed for Bursars of the First Year. *See* Trust Disposition of Founder at p. 335 of CALENDAR for 1873-74, and p. 368 of the CALENDAR for 1877-8. *Bursars*—1886, J. J. Trotter; 1887, Ian M'Intyre; 1889, W. G. Napier. *Lapsed Bursaries for two years*, Thomas Finlay, A. H. Gray, and John Turner; James Paterson, Preferential Candidate.

LVI. *Lanarkshire* (Upper Ward of) *Bursaries.* — Bursars must attend the Classes in the Arts Curriculum. Mr R. Brown, Secretary, 28 St Andrew Square. *Bursar*—1888, J. D. P. M'Letchie.

LVII. *Johnstone of Harthope Bursary.* Natives of Moffat, Peebles, and Students of the name of Alexander or Johnstone preferred, if preferential candidates announced to Secretary of Senatus before 1st of October. *See* Deed of Foundation, at p. 350 of CALENDAR for 1875-76. *Bursar*—1889,

LVIII. *Lambert Bursary.*—This Bursary cannot be instituted until after the death of an annuitant. *See* Deed of Foundation, at p. 342 of CALENDAR for 1875-1876.

LIX. *Fife and Kinross Bursary.*—Open only to Students from Fife, Clackmannan, and Kinross. Applications may be made to the Secretary, Mr W. G. Roy, 16 Dublin Street, Edinburgh. *Bursar*—1888, J. T. C. Ireland.

LX. *Marshall Bursary.*—Restricted in the first place to relatives of Founder,

next to Students of the name of Marshall, and natives of West Lothian. *See* Deed of Foundation, at p. 347 of CALENDAR for 1876-77. *Bursar*—1888, James M. Thomson.

LXI. *Fothringham and Forrest Bursaries.* Relatives or namesakes of the Founder, then such as are of the name of Forrest, to be preferred. *Bursars*—1889, James Wood.

LXII. *Earl of Zetland's Bursaries.*—These Bursaries are open to First Year Students in the Faculty of Arts, who are natives of the Islands or County of Orkney and Zetland, or children of parents, one or both of whom shall have been born in or connected for a long period of years with the said Islands or County. For Deed of Foundation of these Bursaries, *see* p. 373 of CALENDAR for 1877-78. Application to be made to Messrs H. G. and S. Dickson, W.S., 12 Castle Terrace, Edinburgh. *Bursar*—1888, David Flett.

LXIII. *Edinburgh East Lothian Association's Bursary.*—The Bursary may be competed for by any lad under the age of 18, who has been educated at any school in East Lothian, or who, having passed through all the standards or their equivalents at such schools, shall have afterwards attended for not more than three sessions any secondary school within or without the county. Application may be made to J. Purves, S.S.C., 65 Frederick Street. *Bursar*—

LXIV. *Edinburgh University Endowment Association's Bursaries* are open to Students entering the Faculty of Arts for the first time, are tenable for three years, and the Examination is held at the annual Arts Bursary Competition. Bursars must proceed through the Curriculum in Arts, and pass the Examinations for the Degree of M.A. Cannot be held with any other Bursary. *See* Minute of the Endowment Association, among Deeds of New Foundations, p. 375 of CALENDAR for 1878-9. *Bursars*—1887, T. A. Robertson, A. Hamilton. 1888, Frank R. Pearson, C. E. Stuart. 1889, Robert Godfrey, Grahame Bailey, H. T. L. Taylor.

LXV. *Gillan Bursaries.*—Founded in 1878 by James Gillan, Forres. Three of £35 each, two open to natives of Forres, and one to natives of Dyke. Candidates must attend the Arts Curriculum in the University of Edinburgh, and afterwards the New College, Edinburgh, with a view to the ministry of the Free Church. For particulars application may be made to Messrs R. & R. Urquhart, Solicitors, Forres. *Bursars*—Charles F. Charleson, Cecil J. Davidson.

LXVI. *Thomson Bursaries.*—Candidates of the name of Thomson or Traquair, or natives of town or county of Dumfries or city of Edinburgh, preferred. Apply to Messrs Traquair, Dickson, & Maclaren, W.S., 11 Hill Street. *Bursars*—1886, James Watt. 1887, A. M. Hunter. 1888, George Liddell. 1889, A. Claud Montgomerie Bell.

LXVII. *Patterson Bursary.*—For Anglo-Saxon. To come into operation on the death of an annuitant. *See* Deed of Foundation at p. 379 of CALENDAR for 1880-81.

LXVIII. *Highland and Agricultural Society's Bursaries.*—The Society annually grants £200 for ten Bursaries of £20 each, tenable for one year, at the University of Edinburgh, for the purpose of enabling the holders to take the classes necessary

to qualify for the Society's Certificate or Diploma, to be determined by examination held in Edinburgh by the Society's Examiners.

LXIX. *John Welsh Bursaries*, founded by Thomas Carlyle in 1881, in memory of his Father-in-law, to whom the estate of Craigenputtock in Dumfriesshire, bequeathed by Mr Carlyle to the University of Edinburgh, formerly belonged. The Bursaries are paid from the rents of that estate, and are eight in number, of the value of about £20 each, tenable for four years. They are awarded, after competition, to Students entering the University, who have not studied in any other University. Five are to be given to the competitors most proficient in Mathematics, and five to those most proficient in Classics. They are not to be held with any other Bursary. *See* Deed of Foundation at p. 379 of CALENDAR for 1881-82. *Bursars*—(*Classical*)—1886, Patrick Duncan; 1887, James Currie, H. Gordon. (*Mathematical*)—1886, J. J. Hewison, H. W. Price; 1887, James Mitchell, Robert Pollok.

LXX. *Mackinnon Bursaries.*—Three Bursaries about £18, 15s., tenable for three years, to encourage the study of the Mechanical Sciences. Each Bursary is open for competition to Students entering their First Session in the Faculty of Arts. Candidates must be natives of the counties of Argyll, Bute and Arran, Inverness, Ross or Sutherland, and must be able to speak the Gaelic language. The Examination is held at the annual competition for Bursaries at the beginning of each Session, with an additional examination by the Professor of Celtic; at least 10 per cent. of the total marks attainable being assigned to Gaelic. Each Bursar is bound to attend at least two classes in the Faculty of Arts during his tenure, and among these six classes, at least one class of Mathematics, one of Natural Philosophy, and the class of Engineering. The Bursary cannot be held along with any other Bursary, Scholarship, or Fellowship in a Scottish University, or with any office yielding an annual income of £50 or upwards, and is tenable only during good behaviour and proficiency. *Bursars*—1889, Duncan M'Nab, David Duncan.

LXXI. *Whitelaw Bursaries.*—In memory of James Whitelaw, Watchmaker. Three Bursaries, about £23 each, tenable for three years, open to Students about to enter, or who follow the Curriculum in Arts. Cannot be held along with any other Bursary, Scholarship, or Fellowship in a Scottish University, or with any office yielding £50 annually, or upwards. Examination in October annually. *Bursars*—1888, Peter Campbell, Albert E. Goodwin, Robert Welsh.

LXXII. The *Renton Bursary*, founded by the Trustees of the late William Renton, 20 Royal Terrace, Edinburgh, is for a Student pursuing his studies in the classes of Natural Philosophy, Mathematics, Chemistry, and Political Economy, or such of them as he may consider proper, and who may require assistance. The Bursary is tenable for one year, and cannot be held by any one under the age of sixteen or above twenty-one. It is filled up in November each year. The Examination is conducted each year by the Assistant to one of the Professors of Natural Philosophy, Chemistry, and Mathematics in turn, and in the above-named order. *Bursar*—1889, F. R. S. Walker.

LXXIII. The *Macdougall Bursaries* are open to Students of Edinburgh, Glasgow, and St Andrews Universities. Students attending the Gaelic Class to be preferred. The Bursaries cannot be held with any Bursary or appointment

yielding £50 per annum. *See* Deed of Foundation at p. 435 of CALENDAR 1885-86. Application may be made to Mr W. C. Young, solicitor, Perth. *Bursars*—1886, W. Smith, C. D. M'Intosh; 1887, W. A. Neilson; 1888, James Hood, Naughton Macnaughton.

LXXIV. *Newton Bursaries.*—Two are awarded annually, one to the most distinguished Student in the Junior Class of Natural Philosophy, and one in the Senior (Second) Class of Mathematics. The Bursaries are tenable for two years, and the Bursars must continue their studies in the higher branches of the subjects of their Bursaries, and at the end of the second year of tenure, either take Honours in Mathematics and Natural Philosophy, pass the 2nd B.Sc. Examination, or give other evidence of advanced study in Mathematics or Natural Philosophy. These Bursaries are not to be held with other Scholarships or Bursaries. *See* Deed of Foundation, p. 460 of CALENDAR, 1886-87. 1889 *Bursars* (*Math.*)—E. M. Horsburgh. (*Nat. Phil.*)—Robert Lees.

LXXV. *Mann Bursaries.*—(1.) Candidates must be children of residents in the town of Nairn, *i.e.*, one or both parents must have resided within the municipal boundaries for at least twelve months at any period prior to the competition. (2.) Applications must be lodged with the Clerk of Senatus at least three weeks before the Annual Bursary Examination of the University, along with evidence of compliance with Rule I. (3.) One will be awarded annually to the candidate, matriculating for the first time in this University, who obtains the highest marks at the Entrance Bursary Examination in English, Latin, Greek, and Mathematics, provided the Examiners be satisfied with the standard he has attained. (4.) Each will be tenable for three years, value about £25 per annum. (5.) Failing candidates of the first year, the vacant Bursary will be awarded as a second year Bursary to the candidate who obtains the highest marks in the Bursary Examination for the second year; and, failing candidates of the first and second years, it will similarly be awarded as a third year Bursary. When awarded under this Rule it is tenable for one year only. (6.) Failing candidates qualified under Rule III. or Rule V., the Senatus may continue one of the Bursaries to its holder for a fourth year, provided he propose to continue his studies for a fourth year in some special subject. (7.) Each Bursar must be *bona fide* engaged in studying for a Degree in Arts or in Science, and must produce evidence at the end of each Winter Session that he has attended at least two classes in the Faculty of Arts, or in a Department of Science, and has made reasonable progress in his studies. (8.) Any breach of these regulations, or conduct unworthy of a scholar and a gentleman, will be punished by forfeiture of the Bursary. See Deed of Foundation, p. 497 of CALENDAR 1887-88, and Regulations at p. 544 of CALENDAR for 1890-91. *Bursars*—1888, W. J. Collier. 1889, Thomas Fraser, James Tolmie; J. A. M'Lean, for one year.

LXXVI. *Allan Bursaries.*—These Bursaries are available to Students attending classes in any of the Faculties of Arts, Medicine, or Law, in the University of Edinburgh, or to Students attending the classes in said University necessary for Degrees in Science; and are tenable for three years or for such part of that period as the Bursar shall remain a Student at the University. In nominating Candidates for presentation to the Bursaries, care will be given to prefer such as have been born in the parish of Kelso, provided they are qualified

by their previous education for entering the University. Apply to P. Stormonth Darling, Esq., writer, Kelso. *Bursars*—1887, William Stoddart, Robert G. M'Kerron. 1888, William Croall.

LXXVII. *James Fairbairn Bursary*, founded by Mrs Kidd of Palmyra, Aigbarth, near Liverpool, in memory of James Fairbairn, late Governor of Heriot's Hospital, is open to competition to first year Students, and is tenable for four years. The Bursar is required to attend the Classes necessary for Graduation in Arts, and to take the Degree at the end of the Course. The Bursary cannot be held along with any other Bursary or Scholarship. See Deed of Foundation, p. 501 of CALENDAR, 1887-88. 1889, R. P. Davidson.

LXXVIII. *Jardine of Thorlieshope Bursaries.*—Natives of the rural districts of Roxburghshire and Dumfriesshire (villages and towns of the population of 2000 and upwards being excluded), who have attended the Public or Board Schools in said counties, to be preferred. In the event of there being no first year Candidates, the Bursaries will be thrown open to Candidates of the second, third, or fourth year in succession, but will be tenable for one year only. The Bursars are required to attend the Classes necessary for Graduation in Arts, and to take the Degree at the end of the Course. The Bursaries cannot be held along with any other Bursary or Scholarship. See Deed of Foundation, p. 497 of CALENDAR, 1887-88. *Bursars*—1889, George White ; Alexander Grieve, for one year.

LXXIX. *MacKenzie* (*Stornoway*) *Bursary.*—Candidates of the name of MacKenzie have a preference. The Examination is in Latin, Greek, Mathematics, and English, and the Bursary will be awarded to the Candidate who stands highest, provided he has reached the standard of the Three Years' Curriculum Examination in at least two subjects. Failing a preferential Candidate, the Bursary will be thrown open to competition as a first year Bursary in Arts. The Bursar is required to attend the Classes necessary for Graduation in Arts, and to take the Degree at the end of the course. For Regulations, &c., see p. 521 of CALENDAR for 1889-90.

LXXX. This Bursary, tenable for four years, is by the will of the founder to be called the "Maclaurin Bursary," and is restricted to Students of the Founder's name of Maclaurin (or in Gaelic orthography "Maclathrin"). See Deed of Foundation, p. 544 of CALENDAR for 1890-91.

LXXXI. Eight Bursaries, each of the annual value of £25, and tenable for two years, six in the Faculty of Arts, and two in the Faculty of Divinity. They are open to Students entering on the third year of the Course in Arts, who are studying for the Ministry of the Church of Scotland. For conditions of tenure and subjects of examination, apply to the Rev. Dr Langwill, Currie, or to Rev. John Patrick, Greenside, Edinburgh.

II.—PRIZES.[1]

I.—THE LORD RECTOR'S PRIZE.

The Lord Rectors since 1879 have, during their respective tenures of office, offered a Prize of Twenty-five Guineas annually, for the best Essay on a Historical Subject. The following are the names of the prizemen :—

1886. John Downie, M.A.
1887. In abeyance.
1888. Geo. Wilton Wilton, B.L.
Prox. access., Hotchkin Haynes Murray
1889. *Stewart Alan Robertson.*

II.—EDINBURGH UNIVERSITY CLUB (OF LONDON) TRIENNIAL PRIZE.

A Prize of Twenty Guineas, open triennially, for competition in any of the Faculties by Graduates of not more than two years' standing, is offered by the Edinburgh University Club of London, for the best Essay on a prescribed subject. *See* Prizes open in 1890-91 for subject, &c.

1887. W. E. Fothergill, M.A.

III.—BRUCE OF GRANGEHILL AND FALKLAND'S PRIZE IN THE CLASSES OF LOGIC AND METAPHYSICS.

This Prize of £20 (with a supplementary Prize of £10 for the Junior Division of the Class) is awarded to the most distinguished student in this class, "on such conditions and competition as the Professor may direct, and on his decision," for excellence in the study of Logic and Metaphysics. It was founded in 1865, by Mrs Tyndall Bruce of Grangehill and Falkland, in commemoration of John Bruce, Professor of Logic and Metaphysics in the University, 1774-1786.

1886. William Caldwell, M.A.
1887. T. E. Sandeman, M.A.
1888. Wm. Ingram, M.A. } equal
William G. Smith } equal
1889. Charles M. Douglas, M.A.
1890. *James Mitchell.*

IV.—GRAY PRIZES.

The Gray Prize Essay Fund was instituted in 1860, in terms of the will of Simon Gray, Esq., of Mornington Crescent, London. It is under the management of Five Trustees, of whom W. Ritchie, D.D., of Duns, is the Secretary.

The Trustees of Gray's Prize Essay Fund offer this year, for competition, three prizes of £20, £10, £5 respectively, for the First, Second, and Third Essays in the order of Merit, on "*The British Constitution compared with Modern Republics.*"

[1] The names of University Prizemen are retained in the CALENDAR for five years.

In terms of the Trust Deed, the Competitors for these prizes must be Students in the University of Edinburgh, who at the commencement of the present Session (1889-90), were not of more than three years' standing, or entering then on the fourth Session, from their first matriculation in a University Curriculum. Each Essay submitted for competition must have a motto prefixed to it, and be accompanied with a *separate* sealed envelope, bearing this motto inscribed on it, and having enclosed the name and address of the Author; and these must be forwarded to the Secretary, the Rev. William Ritchie, D.D., Duns, on or before the 1st of September next. The length of each Essay must not exceed what may be read in an hour and half, and in justice to all competitors, the Trustees find it necessary to make adherence to this stipulation an essential condition in the competition. The decision will be announced by advertisement in the newspapers in the beginning of November, but if it is judged that none of the Essays merit the Prizes, the right is reserved of declining to award them, and of offering them for future competition. The successful Essays will be retained as the property of the Trustees. The sealed envelope must not be put within any Essay, but sent enclosed to the Secretary apart.

The Trustees made the awards for the Session 1888-89, as follows:—For Essays on "The Poetry and Letters of William Cowper," 1st prize of £20 to Mr William Stodart, Edinburgh; 2nd prize of £10 to Mr W. A. Prince, Leeds; 3rd prize of £5 to Mr R. Bennie, Galashiels.

V.—DR MUIR'S PRIZES IN SANSKRIT AND COMPARATIVE PHILOLOGY.

In accordance with the intentions of the late Dr John Muir, and with the concurrence of Sir William Muir, the sum of £100, offered by Dr Muir in 1872 as a prize to the first candidate who should take the degree of Doctor of Science in Sanskrit and Comparative Philology within five years,—afterwards renewed, on the same terms, for another period of five years,—has now, together with the interest, been appropriated by the Senatus for Sanskrit and Comparative Philology Class Prizes. It is left to the discretion of the Professor to offer Class Prizes, not exceeding £25 in the aggregate, for competition at the end of the Session 1890-91.

1886. George Middleton
,, J. Grant
1887. Hermann Walter
James M. Grant
1888. Hermann Walter
,, Al. Douglas Thomson

1888. George Douglas } equal
,, John Tennant }
1889. G. A. Ferguson
,, J. E. Wood
,, A. E. O. Flaherty
1890. *John Maclennan*
,, *E. Monteith Macphail*

VI.—SCOTT AND DUNBAR PRIZE.

This Prize, of the value of about £18, was founded in 1872 by the Rev. Hew Scott, D.D., of Anstruther Wester, for encouraging the study of the Greek Language in the University of Edinburgh. It will be awarded biennially only till further notice, to "the most deserving and learned student in the Greek Classes." The next award will be made at the end of Session 1890-91, after such Examination as may be directed by the Principal and the Professors of Divinity, Greek, and Humanity. *See* Deed of Foundation at p. 332 of CALENDAR, 1873-74.

1886. John Tennant
1887. James C. Smith
1888. { J. A. Norrie / James Watt } equal
1889. *Patrick Duncan*

VII.—THE COUSIN PRIZE.

This Prize, founded in connection with the Class of Fine Art through a bequest by the late David Cousin, Esq., is of the annual value of about £14, 14s. 6d., and is awarded at the close of each session for proficiency in Class Essays set from time to time by the Professor. *See* Excerpt from Mr Cousin's will in CALENDAR 1880-81, p. 380.

1886. J. G. Fraser
1887. R. A. Falconer
1888. David J. Vallance
1889. Johnstone Murray
1890. *Duncan Mackenzie*

III.—SCHOLARSHIPS.[1]

I.—PITT CLUB CLASSICAL SCHOLARSHIP.

The Pitt Club Scholarship of the annual value of £57, 10s. 4d., tenable for not more than four years. It is under the management of the Senatus Academicus. By ordinance No. 17 of the Scottish Universities' Commissioners it is open for competition to all who have passed regularly through the Course in Arts in the University, and have been admitted to the Degree of M.A. in Edinburgh, at any time within four years before the competition takes place. The subjects embraced in the examination are CLASSICS and ENGLISH LITERATURE. The next competition will take place in December 1892.

1888. *Norman Maclean, M.A.*

II.—MACKENZIE CLASSICAL SCHOLARSHIP.

This Scholarship was founded in 1862, by James Mackenzie, Esq., W.S., and is of the annual value of £121, 10s., tenable for not more

[1] The names of University Scholars are retained in the CALENDAR for five years.

than four years. It is under the management of the Senatus Academicus. By ordinance No. 90 of the Scottish Universities' Commissioners, it is open for competition to all Graduates in Arts in the University of Edinburgh of not more than three years' standing at the time of the competition. Candidates are examined in CLASSICAL LITERATURE and in ENGLISH LITERATURE, and the Examination is conducted by three or more Examiners selected by the Senatus from their own body. It cannot be held along with any other Scholarship, Fellowship, or Bursary, of any Scottish University. The Examinations include—1. Translations from Latin and Greek authors; 2. Composition in Latin and Greek Prose; 3. Latin and Greek Literature, and History; 4. English Essay-Writing; 5. History of English Literature. The next competition will take place in December 1892.

1888. *George Smith, M.A.*

III.—SIR DAVID BAXTER MATHEMATICAL SCHOLARSHIP.

This Scholarship was founded by Sir David Baxter, Bart., of Kilmaron, is of the annual value of £61, 15s. 10d., and tenable for not more than four years. By the terms of the Deed of Foundation (given in the CALENDAR for 1864-5, p. 171) it is awarded for proficiency in the department of Mathematics, particularly in that branch of it which includes mechanical and physical science. Competitors must be Graduates in Arts of the University, of not more than four years' standing at the time of the competition, who have taken Honours in the department of Mathematics. The next competition will take place in December 1890.

1886. *Alexander Morgan, M.A.*

IV.—SIR DAVID BAXTER PHILOSOPHICAL SCHOLARSHIP.

This Scholarship was founded by Sir David Baxter, Bart., of Kilmaron, is of the annual value of £61, 15s. 10d., and tenable for not more than four years. By the terms of the Deed of Foundation (given in the CALENDAR for 1864-5, p. 171), it is awarded for proficiency in the Department of Mental Philosophy. Competitors must be Graduates in Arts of the University, of not more than four years' standing at the time of the competition, who have taken Honours in the department of Mental Philosophy. The subjects of examination are Logic, Metaphysics, and Moral Philosophy. The next competition will take place in December 1890.

1886. *George W. Stewart, M.A.*

V.-VII.—JOHN EDWARD BAXTER SCHOLARSHIPS.

These Scholarships were founded in 1876, and are three in number, each of the annual value of £104, 8s. 6d., and tenable for three years. One is in the Department of Classical Literature, another in Mental Philosophy, and the third in Mathematics and Natural Philosophy. They are open for competition to all Masters of Arts of the University of not more than three years' standing at the time of the competition. The Scholarship in *Philosophy* will be competed for in December 1890. *See* Deed of Foundation at p. 361 of Calendar for 1877-78.

1886. F. R. Jamieson, M.A. (Cl.)
1887. Wm. Mitchell, M.A. (Ph.)
1888. David B. Mair, M.A. (Ma.)
1889. *Patrick Duncan, M.A.* (Cl.)

VIII.—DRUMMOND MATHEMATICAL SCHOLARSHIP.

This Scholarship was founded in 1865 by Miss Elizabeth Drummond, in memory of her brother, Captain Drummond, R.E., Under Secretary for Ireland. It is of the annual value of £105, 12s. 6d., and is tenable for three years. By the Deed of Foundation (given at p. 198 of CALENDAR for 1865-6), it is open to Graduates in Arts of not more than three years' standing, who have graduated with Honours in the Department of Mathematics. It cannot be held with any other Bursary or Scholarship, and the holder is recommended to travel for the purpose of inspecting, in this and other countries, remarkable engineering and architectural structures, to extend his knowledge of the practical application of Mathematical principles; and, if required by the Senatus Academicus, to deliver reports on the principal structures examined by him, and the Mathematical principles exemplified thereby; which reports the Senatus may cause to be publicly read in the University or elsewhere in Edinburgh. The next competition will take place in December 1890.

1887. *David A. Welsh, M.A.*

IX.—BRUCE OF GRANGEHILL AND FALKLAND'S CLASSICAL SCHOLARSHIP.

This Scholarship was founded in 1865 by Mrs Tyndall Bruce of Falkland, is of the annual value of £100, and tenable for three years, during two of which the studies of the Scholar must be prosecuted in the University of Edinburgh, but in the third year they may be prosecuted in an English or Foreign University. By the terms of the Deed of Foundation (given at p. 205 of the CALENDAR for 1866-7), this and the two following Scholarships held by Students who have passed their Examinations for the Degree of Master of Arts with Honours, being hitherto conferred upon the most distinguished in that one of the Honours Departments

which is appropriated for each year. The Scholarship cannot be conferred upon any one whose age exceeds twenty-three years, and it cannot be held with any other Scholarship or Fellowship of a Scottish University, or with any situation yielding an income of £100 per annum. The next award will be made in April 1891.

1888. *James G. Goold, M.A.*

X.—BRUCE OF GRANGEHILL AND FALKLAND'S SCHOLARSHIP IN MENTAL PHILOSOPHY.

This Scholarship was founded in 1865 by Mrs Tyndall Bruce of Falkland, is of the annual value of £100, and is tenable for the same period, and under the same conditions as the preceding. The subjects of examination are Logic and Psychology, Metaphysics, Moral Philosophy, and History of Philosophy. The next award will be made in April 1892.

1886. William Caldwell, M.A. | 1889. *W. G. Smith, M.A.*

XI.—BRUCE OF GRANGEHILL AND FALKLAND'S MATHEMATICAL SCHOLARSHIP.

This Scholarship was founded in 1865 by Mrs Tyndall Bruce of Falkland, is of the annual value of £100, and is tenable for the same period, and under the same conditions as the preceding. The subjects of examination are Mathematics and Natural Philosophy. The next award will be made in April 1893.

1887. James Crocket, M.A. | 1890. *Charles Tweedie, M.A.*

XII.-XIII.—GRAY SCHOLARSHIPS.

These two Scholarships founded by Mr Gray of Baad Park in 1864, are each of the annual value of £44, and tenable for a period not exceeding two years. All candidates must pass the Examination for the Degree of Master of Arts. In making appointments the Senatus are directed to prefer in the first place candidates of the name of Gray ; and secondly, such as have been born in the parishes of Midcalder or Kirknewton. Failing well qualified Candidates, who fulfil these conditions, the Scholarships may be awarded to distinguished candidates for the Degree in Arts in the Honours departments.

The scholars must proceed to study in one of the Faculties of Divinity, Law, or Medicine.

1886. Robert Latta, M.A.
1887. Alex. S. Martin, M.A.
1888. Wm. G. Smith, M.A. (lasped Scholarship)
1888. William Gray, M.A.
1889. Walter T. Watson, M.A.
1890. *Arthur Herbert Gray, M.A.*

XIV.—GILCHRIST SCHOLARSHIPS.

These Scholarships were founded in 1865 by the Trustees of the late Dr Gilchrist; they are three in number, each of the annual value of £100, and are open to natives of India who have passed competitive examinations at the Presidential Colleges of India. They are attached to the Medical, Law, and Literary Classes in the University.

XV.-XVII.—MISSES BAXTER OF BALGAVIE'S SCHOLARSHIPS.

These Scholarships were instituted in 1868 and 1878 by Miss Mary Baxter of Balgavie. They are three in number, two of the annual value of £40, the third of £20. They are in the gift of the Directors of the High School of Dundee. They are open for competition to all pupils who shall have finished their course at the time, or within one year previously, at the High School of Dundee. The examination is held at Dundee by examiners appointed by the Directors, and the subjects are Geometry, Algebra, Trigonometry, and Mechanical Drawing. The Scholarships are tenable for one year certain, and for a second if a favourable certificate is sent to the Directors by the Senatus Academicus. The patrons may extend the tenure of these Scholarships for a further period of one year, provided the holder shall have previously passed the First Examination for the Degree of Bachelor of Science in the Department of Engineering in this University. The Classes to be attended in the first year are Mathematics, Natural Philosophy, and Engineering; in the second year Chemistry, Engineering, and the second course of Natural Philosophy, and for the third year any two classes to be selected by the student, and approved by the Senatus.

These Scholarships are not to be held with any other Scholarship, Fellowship, or appointment yielding £50 per annum. *See* Deeds of Foundation, at page 255 of the CALENDAR for 1869-70, at p. 372 of CALENDAR for 1878-79, and at p. 377 of the CALENDAR for 1881-2.

1886. Albert Nagel | 1889. *John R. Dick*

XVIII.-XIX.—FETTES EXHIBITIONS.

These Exhibitions are each of the annual value of £60, and are tenable for four years. They are open annually for competition, one among the Foundationers alone, and the other among the Foundationers and such other pupils as have attended Fettes College regularly for not less than five years.

1886. P. S. C. Meiklejohn, P. F. Grant
1887. Ian M'Intyre

1888. F. Cargill
1889. *Wellwood M. Landale*, *J. M. Menzies*

XX.-XXI.—RHIND SCHOLARSHIPS.

These Scholarships were, in accordance with the will of the late A. H. Rhind, Esq., of Sibster, founded by his trustees on the reversion of his estate. They are two in number, each of the annual value of £98, 10s., and are tenable for at least two or three years. One is in the Department of Classical Literature, the other in that of Philosophy. Candidates who are Undergraduates must have completed at least three Sessions in the regular Curriculum in Arts, and have obtained at least two Departmental Certificates. The successful Candidates may be required to undertake duties connected with the teaching of the University, or otherwise assist in some department of its operations. *See* Deed of Foundation at p. 323 of CALENDAR for 1874-75. The next competition will take place in December 1891.

1888. *Wm. Ingram, M.A.* (Ph.) | 1888. *Thomas R. Mills* (Cl.)

XXII.—SCHOLARSHIPS IN MUSIC.

By the will of Signor Theophile Bucher, who died in 1871, his trustees were enjoined (on the death of a liferentrix, who died in March 1889) to pay over the residue of his estate, amounting to about nearly £4000, to the Senatus and Curators of the University for the purpose of founding one or more Scholarships of music to be held by any young men born in Scotland, who may shew a natural talent for music and wish to make it their profession, for the purpose of improving their education, and enabling them to prosecute the study of the science and art of music in Italy, Germany, and France.

XXIII.—THE CHARLES MACLAREN SCHOLARSHIP.

This Scholarship was founded in 1871 by the Trustees of Mrs Maclaren, in memory of Charles Maclaren, Esq., the eminent geologist, is of the annual value of £95, 19s. 2d., and is tenable for three years. It is for the encouragement of the study of Mathematics and Natural Philosophy, and is open to all graduates in Arts of not more than three years' standing at the time of the Competition (and under 30 years of age) who shall have taken honours in Mathematics. The successful competitors are to spend a few months in travelling and in examining remarkable Engineering and Architectural Structures, and to report to the Senatus, which report the Senatus may cause to be publicly read in the University. The Deed of Foundation is given at p. 324 of CALENDAR for 1873-74. The next competition may be in December 1890.

1887. *James Goodwillie, M.A.*

XXIV.—NEIL ARNOTT SCHOLARSHIP FOR EXPERIMENTAL PHYSICS.

This Scholarship, value about £38, 10s., was founded in 1874, and is awarded annually to the most distinguished Student in the Physical Laboratory of the University.

The recipient must, during the ensuing Summer and Winter Sessions assist the Professor of Natural Philosophy in the Laboratory. Failing a Student deemed by the Professor worthy of the Scholarship, it may be given to the Candidate for a Degree in Arts who has undergone the Examination in Natural Philosophy with most distinction. *See* Deed of Foundation, at p. 340 of CALENDAR for 1875-76.

1886. J. Clark
1887. A. J. Herbertson, R. Turnbull, } equal
1888. J. W. Butters.
1889. James Rennie.
1890. *P. F. Gillies.*

XXV.-XXVII.—FERGUSON SCHOLARSHIPS.

The examination of Candidates for Three of these Scholarships will be held in Glasgow, on Tuesday, 1st October 1890, and following day. One of the Scholarships to be awarded for the greatest proficiency in Classics; one for the greatest proficiency in Mathematics, including Natural Philosophy; and one for the greatest proficiency in Mental Philosophy, including Logic, Metaphysics, and Ethics.

Subjects for Examination:—

CLASSICAL SCHOLARSHIP.

Latin—

Lucretius, "De Rerum Natura," Books I., II., III., and V.
Virgil, "Eclogues," "Georgics," and "Aeneid," Books I.-VI.
Horace, "Odes" and "Epistles."
Cicero, "Epistolae ad Familiares," Books I.-VI.
Tacitus, "Annals," Books I.-VI.
Quintilian, Book X.
Translations from Authors not prescribed.
Latin Prose Composition.

Greek—

Homer, "Iliad," Books XVI.-XXIV.
Pindar, "Pythian Odes."
Aeschylus, "Prometheus, Agamemnon, Persae."
Thucydides, Books VI. and VII.
Demosthenes, "De Corona."
Plato, "Republic," Books I.-V.
Translations from Authors not prescribed.
Greek Prose Composition.

QUESTIONS—

(1.) On Language, Greek and Latin.
(2.) On Greek History and Literature, in the 5th and 4th centuries B.C.

(3.) On Roman History and Literature, from B.C. 131 to A.D. 68. The Questions will bear chiefly on the books prescribed.

MATHEMATICAL SCHOLARSHIP.

Mathematics—Euclid's Elements. Modern Geometry.
Algebra, including Determinants, Finite Differences, and Theory of Equations.
Trigonometry, Plane and Spherical.
Analytical Geometry, in Two and Three Dimensions.
Differential and Integral Calculus, and Differential Equations.

Natural Philosophy—Abstract Dynamics (commonly called Mechanics) including Kinematics and Statics and Kinetics of Solids and Fluids.
Experimental Physics and Applied Mathematics, including all the ordinary subjects treated in Lectures on Natural Philosophy.

PHILOSOPHICAL SCHOLARSHIP.

Logic—Province and History of Logic. Logical Forms of Notions, of Judgments, and of Inferences. Fallacies and their Causes. Evidence. Authority and Historical Proof. Physical Science and its Methods. Recent Discussions affecting Logic.

Metaphysics—Psychology and Ontology. Nature, Origin, and Limits of Man's Knowledge of Self, the Material World, and God. History and Critical Analysis of Ancient and Modern Metaphysical Systems.

Moral Philosophy—Psychology and Metaphysic of Ethics. Moral Faculty, Motives, and Will. Moral Government of the World and cognate Questions. Applied Ethics, including relations of Ethics to Law and Politics. History and Critical Analysis of Ancient and Modern Ethical Theories.

The Competition will be open to all persons who have passed the last of the Examinations required for the degree of Master of Arts in one of the Universities of Scotland (whether taking the degree at the same time or not) within two years immediately preceding, and who have not already gained one of these Scholarships or competed more than once previously for any of them.

The Examinations will be conducted in writing, and the Scholarships awarded on the report of the Examiners as to the merit of the Candidates, but the minimum of 600 out of 1000 marks must be reached in order to entitle to a Scholarship.

The Scholarships of £80 each per annum are tenable for two years, subject to fulfilment of the following Rule of the Trustees:—

"Persons gaining the Scholarships will, during the tenure thereof, be expected to prosecute studies in furtherance of the higher learning; and those who have not graduated shall be required to

do so before the last payment is made. Any case of conduct unbecoming a scholar and a gentleman shall incur forfeiture of the Scholarship, of which the Trustees shall be sole judges."

Certificates will be granted to such of the unsuccessful Competitors as, in the opinion of the Examiners, shall have taken a distinguished position in the Examinations.

Candidates are requested to give in their names, personally or by letter, at the Office of The Ferguson Bequest Fund, 94 Bath Street, Glasgow, not later than 1st September 1890, and due intimation will be sent to those enrolled, as to the place and hours of Examination.

The following Students of the University of Edinburgh have obtained Ferguson Scholarships.

1865. Robert James Muir (Ph.)
1866. Archibald Brown (Cl.)
,, James A. Blaikie (Math.)
,, T. Martin Lindsay (Ph.)
1868. Julius Wood Muir (Math.)
1869. John Marshall (Cl.)
1871. Thomas Kirkup (Cl.)
,, Chas. B. B. M'Laren (Ph.)
1872. Robert Adamson (Ph.)
1873. Donald Ross (Ph.)
1874. Robert Clark (Cl.)
1875. William R. Sorley (Ph.)
1876. William Peterson (Cl.)
,, H. W. G. Mackenzie (Math.)
,, Richard B. Haldane (Ph.)
1877. Henry C. Robson (Math.)
1878. John W. Mackail (Cl.)
1879. William Welsh (Math.)
,, Andrew Seth (Ph.)
1880. George W. Küchler (Math.)
,, Wm. M. Macphail (Ph.)
1881. William R. Hardie (Cl).
,, Alexander Martin (Ph.)
1882. James Seth (Ph.)
1883. George Macdonald (Cl.)
1884. John Alexander Smith (Cl.)
,, C. W. C. Barlow (Math.)
1885. James L. Smith (Ph.)
1887. James Crocket (Math.)
,, Wm. Caldwell (Ph.)

PRESENT HOLDERS OF THE SCHOLARSHIPS.

1888. *Ernest Findlay Scott*, of Glasgow University. Classics.
,, *David Beveridge Mair*, M.A. of Edin. University. Mathematics.
,, *Thos. Edward Sandeman*, M.A. of Edin. Univ. Philosophy.
1889. *Jas. Cruickshanks Smith*, M.A. of Edin. University. Classics.
,, *Andrew Munro*, M.A. of Aberdeen University. Mathematics.
,, *Evan Keri Evans*, M.A. of Glasgow University. Philosophy.

XXVIII.-XXXIX.—VANS DUNLOP SCHOLARSHIPS.

VANS DUNLOP SCHOLARSHIPS, each of the annual value of £100, and tenable for three years, are, by the Deed of Foundation, appropriated to the following subjects:—1. English Literature and Poetry; 2. Classical Learning—Latin and Greek; 3. Engineering and the Mechanical and Useful Arts; 4. Commercial and Political Economy and Mercantile Law; 5. Logic and Metaphysics; 6. Natural Philosophy; 7. Mathematics; 8. Hebrew and Oriental (Semitic) Languages; 9. History; 10. Moral Philosophy; 11. Sanskrit; 12. Agriculture.

In terms of the Trust-Disposition (which is given at p. 380 of Calendar for 1880-81), the Scholarships are given only for "distinguished proficiency" in the various subjects of competition, as determined by the Examiners and the Senatus Academicus.

The following are the General Regulations for the Examinations:—

In the Competitions for these Scholarships, Candidates must have regularly attended in at least one class in the University of Edinburgh during each Winter Session in which they claim to have been Matriculated Students.

Each Scholarship is tenable on condition that the Scholar submits annually to the University evidence that he is prosecuting his studies, or his professional work, in a manner satisfactory to the Senatus. The evidence may consist of—(1.) Certificates of attendance on Lectures or Laboratories in this or some other University; or (2.) Certificate of having acted as Assistant to a Professor in this or some other University; or (3.) A written Report of work done by the Scholar during the year, together with a Thesis composed by himself on a subject connected with that work.

Not more than one of these Scholarships can be held by the same person, and Vans Dunlop Scholars cannot hold any other Fellowship, Scholarship, or Bursary in the University of Edinburgh.

Candidates for each of the Vans Dunlop Scholarships must enter their names and addresses *at least one month* before the date of the commencement of each examination, at the *Secretary's Office, University, Edinburgh*, and produce evidence that they have fulfilled the conditions as to eligibility of Candidates.

In the case of Scholarships where attendance on classes may be discontinued for not more than one year, Candidates are required to pay the Matriculation Fee for the year in which the competition takes place.

The names of Candidates highly distinguished in the Vans Dunlop Scholarship examinations may be published.

1.—English Literature and Poetry.

Candidates are subjected to an Examination testing—(1.) Knowledge of the History of English Literature generally, and more particularly through a prescribed period; (2.) Acquaintance with certain books, chiefly of English Poetry, prescribed for special reading; (3.) Ability in English Composition, in the form of an Essay, written in the Examination Room, on some subject of literary criticism.

The Competition is open to all Matriculated Students in the second, the third, or the fourth year of their Matriculation, who have given regular attendance in the Class of Rhetoric and English Literature. The next Competition will take place in April 1891.

The Professor of Rhetoric and English Literature, and an Examiner appointed by the Senatus, are the Examiners.

1888. *James C. Smith* | *Proxime accessit*, Louis G. Irvine

2.—Classical Learning—Latin and Greek.

1. *Latin.*—The Examination will test :—
   (*a.*) Knowledge of Latin books and special subjects previously prescribed.
   (*b.*) Power of Latin Composition, and of translating from Latin authors not previously prescribed.

2. *Greek.*—(*a.*) Knowledge of Greek books previously prescribed.
   (*b.*) Power of Greek Composition, and of translating from Greek authors not prescribed.
   (*c.*) Knowledge of Greek History and Literature.

The Competition is open to Matriculated Students in their second, third, or fourth Session who have completed attendance in the Latin and Greek Classes necessary for graduation in Arts.

Any one who in the previous April may have completed his course for graduation in Arts in three Sessions may take part in the Competition, although not actually a Student in the Session during which the Examination takes place. The next Competition will take place in October 1890.

The Professors of Humanity and Greek are the Examiners.

1887. H. A. A. Kennedy

3.—Engineering and Mechanical and Useful Arts.

The Examination is similar to that for the Second B.Sc. Examination for the degree in Engineering, with the addition of questions on prescribed books treating of Engineering and Mechanical and useful Arts.

The Competition is open to all Matriculated Students who have been in regular attendance on the Class of Engineering for at least two Winter Sessions, and who have not been Students of the University for more than four years. The conditions of tenure of this Scholarship may be altered before the next election. *See* page 536. The next Competition will take place in April 1891.

The Examiners are the Professors of Engineering and Natural Philosophy.

1888. *J. T. Nicolson*

4.—Commercial and Political Economy and Mercantile Law.

(*a.*) Candidates are subject to an Examination testing their knowledge (1.) of Commercial and Political Economy, and (2.) of Mercantile Law—two papers on the former and one on the latter.

(*b.*) The Competition is open to all who have been Matriculated Students for not less than two years, who have not discontinued attend-

ance at the University for more than one year, and who have regularly attended the Class of Commercial and Political Economy and Mercantile Law. The next Competition will take place in March 1891.

(*c.*) The Professor of Political Economy and an Examiner nominated by the Senatus are the Examiners.

1888. *And. H. B. Constable, M.A.*

5.—Logic and Metaphysics.

The Examination will test knowledge of (*a.*) Psychology, (*b.*) Logic, (*c.*) Metaphysics and the History of Philosophy. It will include the subjects embraced in the Lectures on each of these branches; also prescribed Reading and Studies of special subjects.

The Competition is open to all who have been Matriculated Students for not less than two nor more than six years, who have not discontinued attendance at the University for more than one year, and who have regularly attended the Junior and Advanced Classes of Logic and Metaphysics. The next Competition will take place in April 1891.

The Professor of Logic and Metaphysics and the Professor of Moral Philosophy are the Examiners.

1888. *Thomas E. Sandeman, M.A.*

6.—Natural Philosophy.

The Examination will test the knowledge of the Candidates in Experimental Physics and Applied Mathematics. The Competition is restricted to Matriculated Students who have passed at least two and not more than six Sessions at the University, and who have attended the classes of Natural Philosophy. The next Examination will take place in April 1892.

The Professor of Natural Philosophy and an Examiner appointed by the Senatus are the Examiners.

1889. *A. W. Duff, M.A.*

7.—Mathematics.

The Examination will test Candidates in pure mathematical subjects in the Honours Department for the Degree of Master of Arts, and in special subjects to be prescribed by the Examiners from time to time. The Competition is confined to Matriculated Students who have passed at least two and not more than six complete Sessions at the University of Edinburgh, and who have attended at least two of the Mathematical Classes, one of these being the third or Advanced Class. No student is eligible who has discontinued attendance at the University for more than a year. The next Examination will take place in April 1892.

The Professor of Mathematics and an Examiner appointed by the Senatus are the Examiners.

1889. *J. I. Craig, M.A.*

8.—Hebrew and Oriental (Semitic) Languages.

The Competition is open to all Matriculated Students (*a*) who have regularly attended Classes in the University for not less than two and not more than seven years, (*b*) who have attended at least two courses under the Professor of Hebrew and Oriental Languages, and (*c*) who have not discontinued attendance at the University for more than one year.

Candidates will be examined in Hebrew, Syriac, and Arabic.

The Examiners are the Professor of Hebrew and Oriental Languages, and an Examiner to be appointed by the Senatus. The next Competition will take place in 1893.

The conditions of tenure are the same as those applicable to the other Vans Dunlop Scholarships in Arts.

1887. John Mair, M.A.

1890. *James Thomson, M.A.*, *Charles H. Titterton, M.A.* equal.

9.—History.

The Competition is open to all Matriculated Students who have regularly attended classes in the University for not less than two and not more than six years, who have also attended one or more courses of Lectures either by the Professor of History or by the Professor of Ecclesiastical History, and who have not discontinued attendance at the University for more than one year immediately preceding the period of Competition.

The Scholarship will be awarded by competitive examination. The Examiners are the Professor of History, the Professor of Ecclesiastical History, and either the Professor of Humanity or the Professor of Greek. The next Competition will take place in October 1892.

1886. James Marwick, M.A. | 1889. *David P. Heatley.*

10.—Moral Philosophy.

The Competition is open to all who have been Matriculated Students for not less than two nor more than six years; who have not discontinued attendance at the University for more than one year; who have regularly attended the Ordinary and Advanced Classes of Moral Philosophy.

The Professor of Moral Philosophy and the Professor of Logic and Metaphysics are the Examiners. The next Competition will take place in April 1892.

1886. William Mitchell, M.A.
1888. (Lapsed) W. B. Tough, M.A. | 1889. *Charles M. Douglas, M.A.*

11.—Sanskrit and Comparative Philology.

The Competition is open to all Matriculated Students who have regularly attended classes in the University for not less than two and not more than seven years; who have also attended at least two courses under the Professor of Sanskrit and Comparative Philology, and who have not discontinued attendance at the University for more than one year.

The Examiners are the Professor of Sanskrit and Comparative Philology, and another Examiner to be appointed by the Senatus. The next Competition will take place in April 1892.

1886. James Waters, M.A. | 1889. *Hermann Walter.*

12.—Agriculture and Rural Economy.

This Scholarship is open to all Matriculated Students who have regularly attended classes in the University for not less than two and not more than six years, and who have attended the Class of Agriculture and Rural Economy within two years of the date of Competition. The subjects of Examination are Agriculture, Chemistry, Botany, and Veterinary Science. The next Competition will take place in April 1892.

The Examiners are the Professor of Agriculture and an Examiner nominated by the Senatus.

1886. William Somerville | 1889. *Thos. H. Middleton, B.Sc.*

XL.—SKIRVING SCHOLARSHIP FOR MORAL PHILOSOPHY.

This scholarship is to be founded (after the death of an annuitant) in accordance with the Will of the late David Skirving, of No. 13 Westbourne Park, London. It will be of the annual value of about £50, and tenable for three years. *See* Deed of Foundation at p. 350 of Calendar for 1876-77.

XLI.-XLIV.—LANG SCHOLARSHIPS.

This is a Bequest by the late John Lang, Esq. of Warren Park, Ayrshire, with the object of founding four Scholarships, to be called the "Lang Scholarships," one in Natural Philosophy, one in Mathematics, one in Chemistry, and one in Botany. The capital sum will be payable on the death of the survivor of two liferenters.

XLV.—STEVEN SCHOLARSHIP IN AGRICULTURE.

This Scholarship was founded in 1882 by the Misses Steven of Bellahouston in memory of their brother Moses Steven, Esq. It is of the value of £75, and is awarded annually, in connection with the Class of Agriculture, the subjects of examination being Agriculture and General and Agricultural Chemistry.

The Scholar is required to visit the annual exhibitions of the four leading agricultural societies, or such as the Professor of Agriculture shall appoint, viz:—

The Royal Agricultural Society of England.
The Bath and West of England Agricultural Society,
The Highland and Agricultural Society of Scotland.
Royal Agricultural Society of Ireland.

See Deed of Foundation at p. 397 of CALENDAR for 1882-83.

1886. Robert Haig
1887. T. H. Middleton
1888. John J. Jeffrey
1889. Douglas A. Gilchrist
1890. *Henry Crabtree*

XLVI.—MACKAY SMITH SCHOLARSHIP IN NATURAL PHILOSOPHY.

This Scholarship is of the annual value of £25, tenable for two years, and is open for competition to Students who have attended the Class of Natural Philosophy in this University. The successful candidate is required to attend the class of Natural Philosophy, or to prosecute the study of Natural Philosophy, during at least one year of his tenure of the Scholarship, in such way as the Senatus may direct or approve. The next award may be made at the end of Winter Session of 1891-92.

1887. D. B. Mair, J. Crocket } equal
1888. Alex. Wilmer Duff, M.A.
1889. J. F. M'Kean, M.A. (Lapsed Scholarship)
1890. *James Holm.*

IV.—FELLOWSHIPS.

I.—GUTHRIE FELLOWSHIP IN CLASSICAL LITERATURE.

This fellowship was founded in 1866 by James Guthrie, Esq., London. It is of the annual value of £93, 15s., and is tenable for four years. By the terms of the Deed of Foundation (given at p. 210 of the CALENDAR for 1866-7) it is for proficiency in Classical Literature, and is tenable by Graduates in Arts of the University who have taken their Degree since the last competition. Students who have passed all their examinations for a Degree since the last competition, but have deferred graduating, are also eligible. This Fellowship cannot be held along with any other Fellowship or Scholarship in a Scottish University. The next Competition will take place in December 1890.

1886. Norman Maclean, M.A.

II.—SIR WILLIAM HAMILTON FELLOWSHIP IN MENTAL PHILOSOPHY.

This Fellowship was founded in 1866 by the Subscribers to the fund for a Memorial to the late Professor Sir William Hamilton, and by the Association for the better endowment of the University, and is of the annual value of £97, 5s., tenable for three years. By the Deed of Foundation (given at p. 213 of CALENDAR for 1866-67), the Fellowship is open to all Graduates in Arts in the University of Edinburgh of not more than three years' standing at the time of the competition. It cannot be held along with any other Scholarship or Fellowship in a Scottish University. The subjects of examination are Logic, Metaphysics, Moral Philosophy, and the History of Philosophy. The next Competition will take place in December 1890.

1887. William Caldwell, M.A.

1888. *J. Lorrain Smith, M.A.* (Lapsed Fellowship)

III.—SHAW FELLOWSHIP IN MENTAL PHILOSOPHY.

This fellowship was founded in 1867 by Contributors to a Memorial to Sir James Shaw, Bart., a native of Ayrshire, afterwards Lord Mayor of, and M.P. for London. It is of the annual value of £161, 12s. 6d., tenable for a period not exceeding five years, and is in the patronage of the Senatus Academicus of the University of Edinburgh. This Fellowship is designed for the encouragement of the study of Logic, Psychology, Metaphysics, Moral Philosophy, and the History of Philosophy, and is awarded after competitive examination on these subjects. It is open to Graduates in Arts of any of the four Scottish Universities, of not more than five years' standing at the time of the competition, and is tenable for five years. It cannot be held along with any other Fellowship, Scholarship, or Bursary in any Scottish University, and it is not open to the competition of any person who already holds a Fellowship in any English or Irish University, though the holder of the Shaw Fellowship will not be precluded from afterwards obtaining an English or Irish Fellowship. The holder is required during the fourth or fifth year of his tenure of the Fellowship to deliver in this University a Course of four Lectures on any of the subjects for the encouragement of the study of which the Fellowship was founded. The first Series of the Shaw Lectures was delivered in 1873 by the Rev. Professor Lindsay, on "William of Occam, and his position in Mediæval Philosophy"—not published. The second series, "On the Philosophy of Kant," was delivered by Professor Adamson in January 1879, and is published. The third series was delivered by Mr W. R. Sorley in January 1884 on the "Ethics of Naturalism"—is also published. The next Competition for the Fellowship will take place on

20th and 21st December 1893. (Deed of Foundation, p. 237 of CALENDAR for 1868-9.)

1888. *William Caldwell, M.A.*
Proxime accessit, J. Lorrain Smith, M.A.

WILLIAM DICKSON TRAVELLING FUND.

This Fund (the interest of which amounts to about £88 per annum) has been established for the purpose of assisting Graduates of any Faculty, of not more than Three Years' standing, to travel, for a shorter or longer period, for purposes of study or research. Grants from the Fund may be made to holders of Scholarships, Bursaries, &c.

Applicants are required to state—"(1) The purpose for which the Applicants desire to get a Grant for travelling; (2) the total amount of expenditure thought necessary; (3) the other means they have towards meeting this expenditure; and (4) the amount of the Grant required from the Fund."

The award of a grant to be based on—"(1) The importance of the work proposed to be undertaken; (2) the sufficiency of the means proposed to be applied to the work; (3) the capability of the Applicants for the work they respectively propose to undertake."

"Holders of Grants in all cases to satisfy the Senatus by periodical reports that they are carrying out satisfactorily the work or investigation undertaken; and to present a final report, or to deliver a course of public University Lectures on their work when completed."

Applications must be lodged with the *Secretary of Senatus* on or before 15th March annually.

For Deed of Endowment, see p. 514 of CALENDAR 1889-90.

1887.

Herbert F. Waterhouse, M.B., C.M., £40 to assist him in investigating the Etiology of Septic Peritonitis, and to attend Surgical and Ophthalmic Cliniques in a German University.

Malcolm Laurie, B.Sc., £25 to assist him in investigating the development of Cephalopoda at the Marine Station at Naples.

W. W. D. Campbell, M.A., £20 to assist him in studying Philosophy at Heidelberg.

John F. Ewen, B.Sc., £10 to assist him in the investigation in England of Applications of Mechanical Science.

J. J. Cook, M.A., L.L.B., £20 to assist him in studying different forms of Judicial Procedure in German and other Courts of Law.

1890.

William Thompson, M.A. | *G. W. Wilton, B.L.*

FELLOWSHIPS, SCHOLARSHIPS, UNIVERSITY PRIZES, AND BURSARIES, OPEN FOR COMPETITION IN THE FACULTY OF ARTS DURING THE ACADEMIC YEAR COMMENCING 1ST OCTOBER 1890.

Fellowships.[1]

1. *Sir William Hamilton Fellowship in Mental Philosophy*, value about £97, 5s., tenable for not more than Three Years. Open to Edinburgh Graduates in Arts who have passed within three years preceding the competition.

2, 3. *Guthrie Fellowships in Classical Literature*, each of the annual value of about £93, 15s., one tenable for not more than Four Years, and one for Two Years. Open to Edinburgh Graduates in Arts, and to those who have passed all the examinations necessary for that degree, within four years preceding the competition.

4, 5. Two *Merchant Company Watson Fellowships*, one Classical, the other Mathematical, each £100 per annum, and tenable for two years, are open for competition on 29th September 1890, to Students who during five years immediately preceding the competition have attended not less than two Winter Sessions continuously at the University of Edinburgh. Candidates must send their names and addresses, along with Certificates, by letter, not later than 1st July 1890, to the *Secretary of the Merchant Company*, 14 Hanover Street, Edinburgh, from whom further information may be obtained.

Scholarships.[2]

6. *John Edward Baxter Scholarship in Mental Philosophy*, value about £104, 8s. 6d. a-year, tenable for not more than Three Years. Open to Graduates in Arts of the University of Edinburgh, of not more than three years' standing at the time of the competition.

7. *Drummond Mathematical Scholarship*, value about £105, 12s. 6d. a-year, tenable for not more than Three Years. Open to Edinburgh Graduates in Arts of not more than four years' standing, who have taken Honours in Mathematics and Physics.

8. *Charles Maclaren Mathematical Scholarship*, annual value about £95, 19s. 2d., tenable for not more than Three Years. Open to

[1] For fuller information regarding Fellowships, see pages 226-228.
[2] For fuller information regarding Scholarships, see pages 212-226.

Graduates in Arts of not more than three years' standing (and who are under 30 years of age), who have taken Honours in Mathematics.

9. *Sir David Baxter Mathematical Scholarship*, value about £61, 15s. 10d. a-year, tenable for not more than Four Years. Open to Edinburgh Graduates in Arts of not more than four years' standing, who have taken Honours in Mathematics and Physics.

10. *Sir David Baxter Philosophical Scholarship*, value about £61, 15s. 10d. a-year, tenable for not more than Four Years. Open to Edinburgh Graduates in Arts of not more than four years' standing, who have take Honours in Philosophy.

Candidates for the foregoing Fellowships and Scholarships must give their names and addresses to the *Clerk of Senatus, University, Edinburgh*, before 1st December. The examinations will commence at ten o'clock on *Friday, the 19th of December* 1890, and be continued on following days, at the same hour, in the *Examination Hall* of the University.

11-15. *Vans Dunlop Scholarships.*—Five Scholarships, each of the value of £100, and tenable for three years. Not more than one of these Scholarships can be held by the same person at one time.

11. *Vans Dunlop Scholarship in English Literature and Poetry*, is open to Students in the second, third, and fourth year of their matriculation, who have attended the class of Rhetoric and English Literature. The examination will be held at the same time as the Graduation in Arts examination in April 1891.

The examination will include, besides the Class Lectures, (*a*) Independent knowledge of the History of English Literature, more particularly from 1350 to 1688; (*b*) Special Readings:—Chaucer's *Prologue to his Canterbury Tales*, and his *Knightes Tale;* Langland's *Prologue to Piers the Plowman;* Gavin Douglas's *Palice of Honour*, and Sir David Lyndsay's *Monarchie;* Spenser's *Faery Queene*, Book i., with Dean Church's *Spenser* in the "English Men of Letters Series;" Sir Philip Sidney's *Apologie for Poetrie;* Shakespeare's *Love's Labour's Lost, Hamlet, Tempest, Coriolanus*, and *Sonnets;* Milton's *Comus, Lycidas, Paradise Lost*, Books i. and ii., and *Samson Agonistes;* Dryden's *Essay of Dramatic Poesy;* Pope's *Dunciad;* Johnson's Lives of Cowley and Pope; Gray's Poems; Burns's Poems; Scott's *Lay of the Last Minstrel* and *Marmion;* Wordsworth's *Excursion*, Books i. and ii., and his *Prose Prefaces and Notes* to his Poems; Keats's *Endymion;* Tennyson's *Maud* and *In Memoriam;* Browning's *Balaustion with a Transcript from Euripides.*

12. *Vans Dunlop Scholarship in Classical Learning—Latin and Greek*, is open to Students entering on their second, third, or fourth Winter Sessions in Arts, who have completed the attendance in the Latin and Greek classes necessary for Graduation in Arts. Examination on Monday, 27th October 1890, and following days, from 10 to 1, and 2 to 4.

Latin.

1. Plautus, *Captivi*, *Aulularia.*
2. Horace, *Satires and Epistles.*
3. Juvenal (omitting ii., vi., ix.).
4. Cicero, *Epistolæ ad Q. Fratrem.*
5. Tacitus, *Annals*, xiv.-xvi. ; *Dialogue de Oratoribus.*

Translation from books not prescribed. Latin prose composition.

General questions on Language, Literature, and History, especially in connection with the books prescribed.

Greek.

I. (i.) Homer's *Iliad*, xviii.-xxiv.
(ii.) Aristophanes, *Wasps* and *Frogs.*
(iii.) Jebb's *Selections from the Attic Orators* (small edition).
(iv.) Plato, Rep. i.-v. (Warren's Edition, Macmillan).

II. Translation from books not prescribed.

III. Greek prose composition.

IV. General questions on Language, Literature, and History, chiefly directed to test a knowledge of the books prescribed.

13. *The Vans Dunlop Scholarship in Engineering* will be open for competition in April or March 1891. For subjects of Examination, &c., see Scholarships in Science open in 1890-91.

14. *Vans Dunlop Scholarship in Commercial and Political Economy and Mercantile Law*, open to all who have been Matriculated Students for not less than two years, who have not discontinued attendance at the University for more than one year, and who have regularly attended the class of Political Economy, and are at the time of competition Matriculated Students. The Competition will take place after the Graduation Examinations in Law in October 1891.

The works on Political Economy recommended to Candidates are given under Scholarships in Faculty of Law open in 1890-91.

15. *Vans Dunlop Scholarship in Logic and Metaphysics*, open to all who have been Matriculated Students for not less than two nor more than six years, who have not discontinued attendance at the University for more than one year; who have attended the Junior and Advanced Classes of Logic and Metaphysics; and who at the time of examination are Matriculated Students. The examination will be (as far as possible) combined with the examination for Honours in the Department of Philosophy in *April* 1891.

Candidates for the Vans Dunlop Scholarships must enter their names and addresses *at least one month* before the date of the commencement of each examination, at the *Matriculation Office*, *University*, *Edinburgh*, along with evidence that they have fulfilled the conditions as to eligibility.

The names of Candidates highly distinguished in the Vans Dunlop Scholarship examinations may be published.

16. *Bruce of Grangehill and Falkland's Classical Scholarship*, value £100, tenable for three years, will be awarded at the graduation in *April* 1891.

17. *Gray Scholarship* of £44 a-year, tenable for two years, will be awarded at the Graduation Ceremonial in *April* 1891.

18. *Neil Arnott Scholarship for Experimental Physics*, of £38, 10s., is awarded annually to the most distinguished student in the Physical Laboratory.

19. *Steven Scholarship in Agriculture* of £75 is awarded annually at the end of the Winter Session in connection with the Class of Agriculture.

20, 21, 22. *Three Ferguson Scholarships*—one in Classics, one in Mathematics, and one in Mental Philosophy—each of the annual value of £80, and tenable for two years, are open to Graduates in Arts, and to persons who have passed all the Examinations necessary for the Degree of Master of Arts in any Scottish University, within two years immediately preceding the date of the Examination. Candidates are required to enter their names at the Office of the Ferguson Bequest Fund, 94 Bath Street, Glasgow, not later than 1st September 1890.

The William Dickson Travelling Fund, established for the purpose of assisting Graduates of any Faculty of not more than three years' standing to travel for the purpose of Study or Research. Applications must be lodged with the Secretary of Senatus on or before 15th March annually.

University Prizes in Arts.

1. *The Lord Rector's Prize*, of twenty-five guineas, for the best Essay on "The effect on the History of Scotland, and on the character and Institutions of the Scottish nation, produced by other Countries, prior to the date of the Union with England."

The Prize is open to Students of the University, and to Graduates of not more than two years' standing. Essays to be lodged with the Principal before 1st November, each bearing a motto, and containing the name, address, and University standing of the Candidate.

2. *Bruce of Grangehill and Falkland's Prize*, of £20 (with a Supplementary Prize of £10 for the Junior Division of the Class) for the most distinguished Student in the Classes of Logic and Metaphysics, in Session 1890-91, to be awarded "on such competition as the Professor may direct."

3. *Neil Arnott Prize*, of about £42, for *Medical Students* who shall pass with greatest distinction the examination in Natural Philosophy for M.A.

4. *Cousin Prize in Fine Art,* of £14, 14s. 2d., for excellence in the Class of Fine Art.

5, 6, 7. *The Trustees of Gray's Prize Essay Fund* offer three Prizes—one of £20 for the first, one of £10 for the second, and one of £5 for the third best Essay on "The British Constitution compared with Modern Republics."

8. *Dr Muir's Prizes* to the amount of £25 are annually awarded in the classes of Sanskrit and Comparative Philology.

9 and 10. *Two Newton Bursaries or Prizes,* of about £21 each, tenable for two years, are awarded annually at the end of the Winter Session —one for proficiency in the Senior (Second) Class of Mathematics, and one in the Junior Class of Natural Philosophy.

11. Prize of Twenty Guineas, offered by the University Club of London, open to all Graduates of this University of not more than two years' standing, for the best Essay on "The Progress of Biblical Archæology during the last Thirty Years." Essays to be lodged with the Dean of the Faculty of Divinity on or before 31st December 1890, each bearing a motto, and accompanied by a sealed envelope containing the name, address, and University standing of the Candidate.

Bursaries in Arts.[1]

The Annual Competitive Examinations for Bursaries in Arts will commence on *Saturday, the 18th of October* 1890, at Nine o'clock, in the *Examination Hall* of the University, and will be continued on the following *Monday,* at the same hour.

The names of the successful Candidates, and of others distinguished in the competition, will be published, in the order of merit, in the University Calendar, along with the names of schools from which they come, provided that they have matriculated and enrolled in the necessary classes for 1890-91.

FOR STUDENTS ENTERING THE FIRST SESSION IN ARTS.

1 and 2. *Two John Welsh Classical Bursaries,* annual value £20 each, tenable for four years. Subjects of examination—Latin, Greek, English.

3 and 4. *Two John Welsh Mathematical Bursaries,* annual value £20 each, tenable for four years. Subjects of examination—Mathematics, especially Pure Geometry. (Candidates are recommended to read Casey's *Sequel to Euclid,* and Wilson's *Solid Geometry and Conic Sections,* as partly indicating the scope of the examination in Geometry. What will be looked for is, not so much exhaustive knowledge of all the more intricate theorems, as a thorough knowledge of such as are

[1] For fuller information regarding Bursaries, see pp. 196 and 199.

more elementary and fundamental in their character, and ability to apply these in fairly straightforward exercises.)

5-11. *Seven George Heriot Bursaries*, each of the value of £30 a year, tenable for three years. Subjects of examination:—(1) Latin; (2) Elementary Mathematics; (3) English; (4) Greek; (5) French and German; (6) Higher Mathematics. Each Candidate must take up subjects (1), (2), and (3), and must attain the pass standard in at least two of these subjects. He may, in addition, take up two, but not more than two, of subjects (4), (5), and (6). The examinations in English, Latin, Greek, and Elementary Mathematics will be the examinations in those subjects at the University Entrance and Bursary Examinations. The examination in Higher Mathematics will be that in Pure Geometry for the John Welsh (Carlyle) Mathematical Bursaries. The examinations in French and German will take place in the University, on Friday, 17th October—French at 9 A.M., and German at 1 P.M.; and an additional examination in Mathematics on Tuesday, 21st October, at 9 A.M. Applications for these Bursaries must be made to the *Governors of George Heriot's Trust, Edinburgh*, not later than the 1st of October. Candidates who desire to be examined in French and German, or in Higher Mathematics, are required to state so in making application.

12-14. *Three University Endowment Association Bursaries*, each of the annual value of £20, tenable for three years.

15, 16. *Two Tyndall Bruce Bursaries*, annual value £20 a-year, one tenable for three years, and one for two years.

17, 18. *Two Sibbald Bursaries*, of the annual value of £30, tenable for four years. Names of Candidates to be sent to Messrs Mackenzie, Innes & Logan, W.S., 23 Queen Street, Edinburgh.

19. *Thomson Bursary*, £25 a-year, tenable for not more than four years. Apply to Messrs Traquair, Dickson, & Maclaren, W.S., 11 Hill Street, Edinburgh, who will give information.

20. *Cowan Bursary*, of £30 a-year, tenable for two years, for natives of Ayrshire. Apply to W. F. M'Cubbin, Esq., Ayr. Conditions of tenure may be modified by Educational Endowments Commission.

21. *First Patrick Bursary*, of about £80 a-year, tenable for two years, for those who have completed their School Education at Ayrshire schools or academies.

22. *Second Patrick Bursary*, of about £40 a-year, tenable for two years, for those who have completed their School Education at Ayrshire schools or academies.

23. *Mackinnon Bursary*, of £18, 15s. a-year, tenable for three years. Candidates must be natives of the Counties of Argyll, Bute and Arran, Inverness, Ross, or Sutherland, and must know Gaelic.

24. *Fotheringham and Forrest Bursary*, of £18, 15s., tenable for four years—restricted in first place to relatives of Founder.

25. *Mann Bursary*, of £25 a-year, tenable for three years. Candidates must be sons of residents in the town of Nairn, *i.e.*, one or other of their parents must have resided within the municipal boundaries for at least twelve months at some period prior to the competition.

26, 27. *Two Grierson Bursaries*, of £20 a-year each, tenable for four years—restricted in the first place to natives of the parishes of Crawford and Leadhills.

28-30. *Three Jardine of Thorlieshope Bursaries*, each of the annual value of £35, and tenable for four years. Natives of the rural districts of Roxburghshire and Dumfriesshire to be preferred. The Bursars are required to attend the classes necessary for the Degree in Arts, and to take the Degree at the end of the course. In the event of there being no first year Students, the Bursary will be thrown open to competition for one year only to second, third, or fourth years' Students in succession.

31. *Ardvorlich Bursary*, of the annual value of £16, tenable for four years. Open to natives of Comrie, Balquhidder, Callander, or Killin, failing whom, to natives of Perthshire, and failing such, to the best qualified Candidate. The holder must attend Arts or Science Classes.

32 and 33. *Two Spence Bursaries*, each of the annual value of £30 for first year and £40 for second year of tenure, open to Students who have studied in the University of Edinburgh, at the commencement of their second session in a three years' curriculum, and of their third session in a curriculum of four years. Examination in Latin, Greek, Mathematics, and British History, to be held at St Andrews in October. Candidates apply to Messrs A. & H. Patullo, Writers, 11 Bank Street, Dundee, for particulars.

34. *Renton Bursary*, of about £18, 8s. 6d., tenable for one year, is for a Student pursuing his studies in the classes of Natural Philosophy, Mathematics, Chemistry, and Political Economy, or such of these classes as he may consider proper, and whose circumstances may require such assistance. The Bursary cannot be held by any one under the age of sixteen or above twenty-one. The Bursar shall cease to hold this Bursary if during the same session he shall be appointed to another Bursary of the value of £30 or upwards. The Examination is in English and Elementary Mathematics, and will take place on Saturday, 8th November, at 10 o'clock. Names of Candidates to be entered at the *Matriculation Office*, on or before 4th November.

The subjects of examination for Bursaries Nos. 1 to 22, inclusively, in the above list, are Latin, Greek, Mathematics, and English Grammar and Composition; except Nos. 1 and 2, for which Mathematics is not required; 3 and 4, in which the examination is exclusively in Mathematics; and 5-11, in which additional subjects are stated

above. The examinations in Latin are held from 9 to 12, and in Greek from 1 to 4 on *Saturday*, 18*th of October;* in Mathematics on *Monday*, 20*th*, from 9 to 12, and in English from 1 to 4; and in Higher Mathematics, for the John Welsh Mathematical Bursaries, on *Tuesday*, 21*st*, at 9 A.M. *No special books prescribed or announced to Candidates.*—The examinations in Latin and Greek include the papers set at the same time for the Three Sessions' Curriculum, so that Candidates for the latter may compete also for the Bursaries; and the examinations in Mathematics in like manner include those for the Entrance Examination in Mathematics.

EXAMINATION FOR PREFERENTIAL BURSARIES. — Preferential Candidates for Nos. 23 to 31 inclusively, must enter their names and addresses, and lodge evidence of their preferential claims, at the Matriculation Office, University, Edinburgh, *on or before* 1*st October*. If no Preferential Candidates are then announced for the Bursaries, they will be disposed of, in open competition or otherwise, in terms of the Deeds of Foundation.

Preferential Candidates will be tested by an examination (*more elementary than that required for the Three Sessions' Curriculum*) in Latin, Greek, Mathematics (including Arithmetic), and English. The Examination in Latin and Greek will include easy unseen passages for translation into English, Grammatical questions, a simple piece of English for Latin Prose, and some easy sentences to be translated into Greek. This Examination will be held in the University, on *Saturday*, 25*th October* 1890, from 9 to 12, and from 1 to 4. (If any Preferential Candidates desire *also* to take a Three Sessions' Curriculum, or to compete for open Bursaries, they must *likewise* present themselves at the Three Sessions' Curriculum examination, on the 18th of October, but not otherwise.) County Clubs, &c., which prefer this examination, may avail themselves of it for their candidates, giving due intimation of this at the Matriculation Office, or to the Dean of the Faculty of Arts.

FOR STUDENTS ENTERING THE SECOND SESSION IN ARTS.

1. *Tyndall Bruce Bursary*, £35 a-year, for three years.

2, 3. *Two Stewart Bursaries*, each £10 a-year, for three years.

The subjects of examination for *Second* Session Bursaries are Latin, Greek, and Mathematics.

The following subjects are prescribed for the examinations in Latin and Greek :—*Latin*—Plautus, *Trinummus;* Horace, *Satires;* Cicero, *Epistolæ ad Atticum*, i.; Latin prose composition. *Greek*—Homer, *Odyssey*, v., vi.; Euripides, *Iphig. in Taur.*, and *Helena;* Thucydides, Book iv.; Greek prose composition.

FOR STUDENTS ENTERING THE THIRD SESSION IN ARTS.

1. *Horsliehill Scott Bursary*, of £33, 8s. 8d. a-year (under deduction of Examiners' fees), for two years.

2. *Macpherson Bursary*, of £42, 18s. 6d. a-year, restricted to Students who are natives of the Highlands and acquainted with Gaelic, tenable for two years. Candidates must present evidence of Highland birth, and of knowledge of Gaelic.

The subjects of examination for *Third* and *Fourth* Session Bursaries are Classics, Mathematics, and Logic with Psychology.

The following subjects are prescribed for the examination in Classics:—
1. Cicero, *Epistolæ ad Atticum*, i., ii. ; 2. Thucydides, Book iv.

No special books prescribed for Mathematics, or for Logic with Psychology. Candidates should revise the lectures and text-books in these classes.

3, 4, 5. *Three Simson Bursaries*, of £25 each, tenable for four years, for Students entering on the third year of the course in Arts who are studying for the Ministry of the Church of Scotland. For conditions of tenure and subjects of Examination apply to the Rev. Dr Langwill, Currie, or to the Rev. John Patrick, Greenside, Edinburgh.

N.B.—The names and addresses of Candidates for First, Second, and Third Session Bursaries must be announced at the "*Matriculation Office, University, Edinburgh*," not later than the 10th of October 1890, and those of Preferential Candidates not later than the 1st of October.

Candidates for the *Entrance Examination* in Latin and Greek, or Mathematics *only*, are not required to give any intimation.

In the Competition for Bursaries, Students who matriculate and enter the Classes in the Curriculum of Arts for the first time in this or any Scottish University, and such only, are considered Students of the *first* session ; and in like manner all and only Students who matriculate and enter the Classes of the Curriculum for the second and third time respectively, are considered Students in their *second* and *third* sessions respectively.

Town Council Bursaries.—Candidates for Bursaries in the gift of the Town Council, many of which are vacant early in October, are referred to the "*City Clerk, Council Chambers*, Edinburgh," to whom early application should be made.

County Club and Private Bursaries.—Candidates for Bursaries instituted by various County Clubs are referred to the respective Secretaries of those Clubs. Information as to Private Bursaries may be obtained from the Patrons or from their Agents.

The attention of all Bursars in the Faculty of Arts is particularly called to the following Regulation :—

"Bursars connected with the Faculty of Arts must annually attend, in the order required by the Dean, at least two of the Classes necessary for the Degree of Master of Arts, and must present themselves at the Departmental Examinations necessary for that Degree.

"Each Bursar must present a Certificate, signed by the Dean, attesting his regular attendance on the proper Classes in the Faculty of Arts, on each occasion on which he applies to the Factor for a payment."

Certificates, in terms of this regulation, will be given to Bursars, by the *Dean of the Faculty of Arts*, after the 11th November; also at the end of the Session in April. In applying to the Dean for the Certificate in November, Bursars must present to him their Class Cards for the Session, as evidence that they have enrolled in their classes; and at the end of the Session they must present to him certificates from the Professors that they have attended with regularity and made progress in their studies. Payments are made by the Factors for the University, "Messrs John Cook and Henry Cook, W.S., 61 North Castle Street, Edinburgh," on and after 19th May for the Whitsunday payments, and on and after 14th November for the Martinmas payments,—between 10 and 3 o'clock.

N.B.—*Bursars, Scholars, and Fellows who desire to resign should at once announce this to the Factor. They must apply to the Factor for the instalments due to them within three months after they have become payable, otherwise they will be regarded as having resigned.*

A CAMPBELL FRASER, D.C.L., LL.D.
Dean of the Faculty of Arts,
and Professor of Logic and Metaphysics.

II.

FACULTY OF DIVINITY.

1889-90.

Dean.

PROFESSOR MALCOLM CAMPBELL TAYLOR, D.D., &c.
6 *Greenhill Park.*

Programme of Classes.

—o—

FACULTY OF DIVINITY.

Dean—Professor TAYLOR.

Introductory Lecture by Professor Flint, on Tuesday, 4th November, at Twelve o'clock.

Classes.	Days of Opening, and Hours of Lectures.	Professors.	Class Fees.
Divinity.....	5 Nov., 12 o'cl.	Prof. Flint, ...	£3 3
Ecclesiastical History.	5 Nov., 11 ,,	Prof. Taylor,....	3 3
Biblical Criticism.....	5 Nov., 10 ,,	Prof. Charteris,.	3 3
Hebrew—Junior Cl. .	5 Nov., 1 ,,	Prof. Adams, ...	3 3
Senior Cl. .	5 Nov., 2 ,,	.....	3 3
Arabic and Aramaic.. (*Mond., Wed., & Frid.*)	12 Nov., 3 ,,	.....	3 3

THE SUMMER PREPARATORY CLASS IN ELEMENTARY HEBREW, conducted by the Class-Assistant under the superintendence of the Professor, opens on 5th May, at 10 A.M. Fee—£1, 11s. 6d.

GIFFORD LECTURESHIP, for "promoting, advancing, teaching, and diffusing the study of Natural Theology in the widest sense of that term." *Lecturer*—Sir GEORGE G. STOKES, Bart., Lucasian Professor of Mathematics, University of Cambridge.

This Course of Lectures will be delivered during Session 1890-91.

Class Assistant in Hebrew and Oriental Languages, . . } JOHN MAIR, M.A.

Examiners for Degree of B.D., { THOMAS A. BICKERTON, B.D.
WILLIAM HASTIE, B.D.

Curriculum

FOR THE

MINISTRY IN THE CHURCH OF SCOTLAND.

The Laws of the Church of Scotland require that every Theological Student, who desires to qualify himself for the Ministry, should attend the Class of *Divinity*, either during *three full and regular Sessions*, or during *two regular and three partial Sessions*;—and also that he should regularly attend during two Sessions each of the Classes of *Hebrew*, *Ecclesiastical History*, and *Biblical Criticism*.

Entrance Examinations.

(1.) Students, before enrolment *for the first year* of their curriculum with a view to the Ministry in the Church of Scotland, must produce to the Professor of Divinity Certificates of their having satisfactorily undergone an Examination in the subjects embraced in the *Curriculum of Arts*, and also in the Elements of Hebrew Grammar. By Act IX. of General Assembly 1872, it is ordained that this Examination shall be conducted at each of the four Scottish Universities, shortly before the commencement of every Session, by four Examining Committees, consisting of members elected by the adjoining Synods, with Conveners nominated by the General Assembly. *The Convener of the Committee for the University of Edinburgh is the Rev. John Alison, D.D., Minister of Newington.* The time of the Committee's meeting

and the prescribed subjects of Examination will be timeously advertised in the *Missionary Record* of the Church of Scotland.

(2.) Students, before enrolment at the beginning of *every Session after the first* of their course in Divinity, must produce certificates of their having satisfactorily undergone the Examinations prescribed by their respective Presbyteries. For subjects of Examination prescribed by the *Presbytery of Edinburgh*, see *Appendix to Calendar.*

Discourses.

Every Student of Divinity is required during his curriculum to deliver with approbation *six* Discourses upon subjects prescribed by the Professor of Divinity, viz., a Homily, a Latin Exegesis, a Lecture, a popular Sermon, a Hebrew Exercise on a passage of the Old Testament, and an Exercise with additions on a passage of the Greek New Testament.

The following Regulations have been made by the Faculty of Theology in regard to the delivery of these Discourses. (1.) Students of the *first* year shall give in their *Homily* to the Professor of Divinity not later than 1st February : (2.) Students of the *second* year shall give in their *Latin Exegesis* not later than the 24th December, and shall be prepared to deliver their *Lecture* not later than the 3d January ; (3.) Students of the *third* year shall give in their *Hebrew Exercise* and their *Greek Exercise* with additions, not later than the 24th December, and shall be prepared to deliver their *Popular Sermon* not later than the 2d of February.

Attendance at Foreign Universities.

The General Assembly of 1868, with the consent of a majority of Presbyteries, enacted and ordained :—(1.) That all candidates for the ministry shall attend during at least *two sessions* the Theological Classes at one or more of the Universities of Scotland, and shall deliver, with approbation, the Six Trial Discourses required by the Acts of the General Assembly ; and (2.) That any Student who wishes to prosecute the remainder of his Theological Curriculum at any Protestant University or

Universities not within the bounds of this Church, shall, before repairing thither, undergo satisfactory examination by the Presbytery with which he is connected, and shall, moreover, satisfy the same Presbytery in regard both to the Classes which he proposes to attend, and to the proficiency he has acquired in the language used in the Foreign University in which he intends to study.

COURSES IN THE FACULTY OF DIVINITY.

I. DIVINITY.

PROFESSOR FLINT.

The course of study in this class extends over three Sessions. The Subjects of the Lectures during 1890-91 will be :—1. Theological Introduction and Encyclopædia. 2. The Philosophy of Religion. 3. Agnosticism. 4. Subjective Soteriology. 5. The Kingdom of God and Church.

Lectures will be delivered on Mondays, Tuesdays, Wednesdays, and Thursdays at 12 o'clock. Fridays will be devoted partly to the hearing of Discourses and Exercises, and partly to Lectures.

The work of the class includes two written examinations and an essay.

II. HEBREW AND ORIENTAL LANGUAGES.

PROFESSOR ADAMS.

A.—HEBREW.

Junior Class—1 *to* 2.

Grammar and Exercises (Davidson's Hebrew Grammar). Translations into Hebrew Prose.

Reading and Explanation of easy Prose and Poetical Passages in the Old Testament. During Session 1890-91 a portion of the Book of Genesis and selected Psalms will be read.

Oral and Written Examinations.

In connection with this Class there is a *Tutorial Class*, con-

ducted by the Class-Assistant, which meets at an hour found most convenient for the Students, on three days weekly during the Session, and which members of the Ordinary Class may attend without additional fee.

There is also a Preparatory Class in Elementary Hebrew, which meets during the SUMMER *Session, and for which the fee is* £1, 11*s.* 6*d.*

Senior Class—2 to 3.

Grammar (Davidson or Gesenius). Müller's Hebrew Syntax. Hebrew Prose Composition.

Reading and Explanation of portions of the Historical, Poetical, and Prophetic Books of the Old Testament. During Session 1890-91 the second half of the Second Book of Kings, the first twenty Psalms, and the Books of Obadiah, Micah, and Habakkuk will be read critically.

Discussion of *Critical and Historical* Questions regarding the Text, Date, Authorship, and Contents of the Books read.

Occasional Lectures on the Hebrew Language and Literature may be given.

Oral and Written Examinations.

B.—ARABIC AND ARAMAIC.

This Class meets at *three* o'clock on Mondays, Wednesdays, and Fridays.

The work consists of—

Instruction in Arabic and Syriac Grammar; Readings from Arabic and Syriac Authors; Easy Translations into Arabic and Syriac; Oral and Written Exercises and Examinations.

It is intended that ARABIC *should form the subject of study in this Class during Session* 1890-91. *A separate Class may also be formed for* ARAMAIC *should a sufficient number of students present themselves.*

Books recommended :—Socin's Arabic Grammar; Wright's or Forbes's Arabic Grammar; Flügel's Edition of the Ḳor'ân; Wright's Jonah in Chaldee, Syriac, Ethiopic, and Arabic;

Nestle's Syriac Grammar, or Nöldeke's Syrische Grammatik; Turpie's Chaldee Manual; Rödiger's Chrestomathia Syriaca; Syriac New Testament, with Gutbir's Lexicon Syriacum (Bagster & Sons).

For the Regulations of the Jeffrey Scholarship in Hebrew and Oriental Languages, — value about £80, — see under "SCHOLARSHIPS IN DIVINITY."

For the Regulations of the Vans Dunlop Scholarship in "Hebrew and Oriental (Semitic) Languages,"—value about £100 annually for three years,—see under "SCHOLARSHIPS IN ARTS" and "SCHOLARSHIPS IN DIVINITY."

The Jeffrey Scholarship will be competed for at the close of Session 1890-91.

III. ECCLESIASTICAL HISTORY.

PROFESSOR TAYLOR.

1. *Lectures*—Mondays and Tuesdays.—On The Rise and Diffusion of Protestantism.

2. *Lectures*—Wednesdays and Thursdays.—On The Progress of the Reformation in Scotland to the death of Knox.

3. *Text-Book*—Fridays.—Kurtz's "History of the Christian Church." First Section; Second, and Third Period.

The work of the class includes three written examinations.

For the Regulations of the Vans Dunlop Scholarship in "History,"—value about £100 annually for three years,—see under "SCHOLARSHIPS IN ARTS" and "SCHOLARSHIPS IN DIVINITY."

IV. BIBLICAL CRITICISM AND BIBLICAL ANTIQUITIES.

PROFESSOR CHARTERIS.

The whole course is arranged to occupy three sessions, in each of which a definite portion of work on the Old and New Testaments will be taken up. The work of each session is independent of the others, and can be studied separately. The first

year's course is occupied with Introduction to the Pentateuch and the historical books of the Old Testament; and with Study of the New Testament in relation to the Old (the Epistle to the Galatians being the starting point). The MSS. of the New Testament and the Versions will also be described as an introduction to Textual Criticism of the New Testament. The second year's course deals with Introduction to the Poetical and Prophetical Books; study of the relation of the Christian Scriptures to heathenism and contemporary philosophy (as in the Epistle to the Colossians), and continuation of Introduction to Textual Criticism of the New Testament. *The third year's course is devoted to the Gospel of St John and questions of church order and Archæology, as suggested by the Pastoral Epistles.* Critical Editions and disputed passages are studied as in Scrivener's "Introduction" during the second and third years' courses. Some portion of "Canonicity" is taken up each year, so as to study the early testimonies to the Christian Scriptures. If time permit, some work on Hebrew Antiquities is studied in the first year's course.

The third year's course will be taken in 1890-91 (as above in italics), with Canonicity, Part iv. (pp. 53-101).

Text-Books.—"Canonicity," by the Professor; Scrivener's Introduction to Textual Criticism.

There will be written and oral examinations, in which all regular students are required to take part; and subjects of occasional voluntary essays will also be suggested.

Class Prize Lists.

WINTER SESSION, 1889-90.

I.—DIVINITY.

STUDENTS OF THE THIRD YEAR.

PRIZEMEN. — 1. Alexander S. Martin, M.A.; 2. Robert James Thompson, M.A.; 3. Robert Burnett, M.A.; 4. David C. Macmichael, M.A.; 5. John C. Peat, M.A.

NEXT IN MERIT.—6. Robert Allardyce, M.A., and W. B. Dempster, M.A.—equal; 8. W. Stevenson Stuart, M.A.; 9. Andrew W. Smith, M.A.; 10. Francis D. Brown, M.A., S. Dunlop, M.A., and D. J. Moir Porteous, M.A.—equal.

STUDENTS OF THE SECOND YEAR.

PRIZEMEN.—1. James M. Kirkpatrick, M.A.; 2. James Cairns, M.A.; 3. Andrew Watt, M.A., and William Borland, M.A.—equal; 5. James N. Cuddie, M.A.; 6. J. R. Fraser Brand, M.A.

NEXT IN MERIT.—7. Alexander H. Christie, M.A., and Alexander L. Johnston, M.A.—equal; 9. Edmond S. Russell, M.A.; 10. Kenneth M'Laren and John M'N. Ramsay—equal; 12. Malcolm Munro, M.A.

STUDENTS OF THE FIRST YEAR.

PRIZEMEN.—1. David A. Rollo, M.A.; 2. W. A. Knowles, M.A.; 3. John Kennedy, M.A.; 4. John Muir, M.A.; 5. Alexander K. Watt, M.A.

NEXT IN MERIT.—6. Alexander Macdonald, M.A.; 7. John C. Pringle, M.A.; 8. Wm. Serle, M.A.; 9. John Craig, M.A.

R. FLINT, D.D., *Professor.*

II.—HEBREW AND ORIENTAL LANGUAGES.

HEBREW—JUNIOR CLASS.

MEDALS.—1. David A. Rollo, M.A., Perth; 2. William Serle, M.A., East Lothian—nearly equal.

PRIZES AND FIRST-CLASS CERTIFICATES OF MERIT.—1. David A. Rollo, M.A., Perth; 2. William Serle, M.A., East Lothian; 3. William A. Knowles, M.A., Perth; 4. Gordon Pringle, Aberdeenshire, and 5. John Craig, M.A., Bonnyrigg—nearly equal; 6. Patrick Sinclair, M.A., Island of Eigg.

FIRST-CLASS CERTIFICATES OF MERIT.—7. J. R. Macdonald, M.A., Edinburgh; 8. John Muir, M.A., Carnwath; 9. James R.

Trotter, M.A., Leith; 10. Roger S. Davidson, M.A., Perthshire; 11. John MacEchern, Inverness.

SECOND-CLASS CERTIFICATES OF MERIT.—12. Arnold S. Smith, M.A., Orkney; 13. W. Lyall Wilson, M.A., Edinburgh; 14. George Luke, M.A., Kinross; 15. John Gray, Stirlingshire; 16. Martin B. M'Innes, M.A., Caithness; 17. John M'N. Ramsay, Edinburgh; 18. J. L. Symington, M.A., Edinburgh; 19. James Bell, Dumfriesshire; 20. William Crockett, Earlston.

HEBREW—SENIOR CLASS.

MEDAL.—James N. Cuddie, M.A., Linlithgow.

PRIZES AND FIRST-CLASS CERTIFICATES OF MERIT.—1. James N. Cuddie, M.A., Linlithgow; 2. Alexander H. Christie, M.A., Gilmerton; 3. Robert Gray, M.A., Pencaitland; 4. Alexander Morrison, M.A., Perthshire, and Alexander Waters, M.A., Wick—equal; 6. T. W. G. Sutherland, M.A., Fifeshire; 7. David C. Macmichael, M.A., Argyleshire; 8. Andrew Watt, M.A., Dundee.

FIRST-CLASS CERTIFICATES OF MERIT.—9. Alexander Menzies, M.A., Auchterarder, J. Malcolm Munro, M.A., Dumbartonshire, and A. C. W. Saunders, M.A., Lerwick—equal; 12. Andrew Dougall, M.A., Stoneykirk; 13. Joseph Moorhead, B.A., Ireland.

SECOND-CLASS CERTIFICATES OF MERIT.—14. Archibald J. D. Scott, M.A., Ayr; 15. William James Ainslie, M.A., Edinburgh, and J. T. R. Sibbald, M.A., Dumfriesshire—equal; 17. James W. Campbell, M.A., Dumfries; 18. Alexander W. Stevenson, M.A., Portobello; 19. James Cairns, M.A., Edinburgh; 20. Kenneth M'Laren, Edinburgh; 21. Gordon Watt, M.A., Edinburgh; 22. Alexander L. Johnston, Selkirk.

SYRIAC—ADVANCED CLASS.

HIGHLY COMMENDED.—Robert Burnett, M.A., Fraserburgh; John William Murray, Peebles; James Thomson, M.A., Ayr; Charles Henry Titterton, M.A., Warwickshire.

SUMMER SESSION, 1889.

PREPARATORY HEBREW CLASS.

MEDAL.—David A. Rollo, M.A., Perth.

FIRST-CLASS CERTIFICATES OF MERIT.—1. David A. Rollo, M.A., Perth; 2. William Serle, M.A., East Lothian; 3. John Craig, M.A., Bonnyrigg; 4. John M'N. Ramsay, Edinburgh; 5. William Lyall Wilson, M.A., Edinburgh.

SECOND-CLASS CERTIFICATES OF MERIT.—6. Arnold S. Smith, M.A., Orkney; 7. William Kerr Neil, Roxburghshire.

DAVID L. ADAMS, D.D., *Professor.*

III.—ECCLESIASTICAL HISTORY.

PRIZEMEN.—1. (*With Class Medal*)—John Kennedy, M.A., Newport, Dundee; 2. Peter MacGregor, M.A., Kenmore; 3. James J. Drummond, M.A., Haddingtonshire; 4. Samuel Dunlop, B.A., Belfast; 5. John C. Peat, M.A., Dundee; 6. David J. Moir Porteous, M.A., Edinburgh; 7. James J. Galloway, M.A., Fife; 8. David A. Rollo, M.A., Perth; 9. Alexander S. Martin, M.A., East Calder.

NEXT IN MERIT.—10. John Muir, M.A., Carnwath; 11. William Knowles, M.A., Perth; 12. Thomas Scott, M.A., Stonehaven; 13. William Serle, M.A., East Lothian; 14. Andrew W. Smith, Kilconquhar; 15. George Bruce, M.A., Errol; 16. William Liddle, Linlithgowshire, and Martin B. M'Innes, M.A., Caithness —equal.

M. C. TAYLOR, D.D., *Professor.*

IV.—BIBLICAL CRITICISM AND BIBLICAL ANTIQUITIES.

PRIZEMEN.—1. Samuel Dunlop, B.A., Belfast; Peter MacGregor, M.A., Perthshire; A. S. Martin, M.A., East Calder; and J. C. Peat, M.A., Dundee—equal; 5. J. N. Cuddie, M.A., Linlithgow; 6. Francis D. Brown, M.A., Ayrshire, and Jas. J. Galloway, M.A., Fife—equal; 8. W. Borland, M.A., Edinburgh, and D. J. Moir Porteous, M.A., Edinburgh —equal; 10. A. Morrison, M.A., Perthshire; 11. J. M. Kirkpatrick, M.A.; 12. A. H. Christie, M.A., Gilmerton, and Alex. Waters, M.A., Wick—equal.

HONOURABLE MENTION.—14. W. L. Jamie, M.A.; A. W. Smith, M.A.; and Andrew Watt, M.A.—equal; 17. James J. Drummond, M.A., Hamilton; Alex. L. Johnston, and Robert Gray, M.A.—equal; 20. W. Liddle, M.A.; 21. W. C. Allan, M.A.

ESSAYS.—1. A. S. Martin, M.A.; 2. A. W. Smith, M.A., and W. Stevenson Stuart, M.A.—equal; 4. Neil Thomson.

A. H. CHARTERIS, D.D., *Professor.*

Regulations

FOR THE DEGREE OF BACHELOR OF DIVINITY.

APPROVED OF BY THE CHANCELLOR OF THE UNIVERSITY 17th OCTOBER 1870, and 17th April 1872.

I. No one shall be admitted as a Candidate for the Degree of Bachelor of Divinity unless he be a Graduate in Arts of one of the Universities of Scotland, or of England, or of Ireland, or of a Colonial

University, whose degrees shall, for this purpose, have been specially recognised by the University Court.

II. This Degree shall be conferred only after the Candidate has completed his Theological Curriculum with a view to the ministry in the Church or Denomination to which he belongs, and after he has passed a satisfactory examination in the various branches of Theology which are taught in this University.

III. Candidates who are not Masters of Arts of the University of Edinburgh must have attended two classes in one or more of the Faculties of this University.

IV. The subjects of examination for the Degree of Bachelor of Divinity shall be arranged in two departments :—The First Department embracing—(1) Hebrew, and (2) Apologetic Theology, or the Evidences of Natural and Revealed Religion ; and the Second Department embracing—(1) Ecclesiastical History, (2) Systematic Theology, and (3) Biblical Criticism and Biblical Antiquities.

V. Candidates who have completed their Theological Course may be examined in either of these departments, and may defer to some future occasion their examination in the other department, provided always that there be not a greater interval than two years between their two examinations.

VI. Students who have completed all the Sessions but one of their Theological Course may be admitted to examination in the first department.

VII. The examinations shall be conducted by the Professors of the Theological Faculty with the assistance of two Examiners, being Bachelors of Divinity of one of the Universities of Scotland, to be nominated by the University Court.

VIII. The Examination in the First Department shall take place at, or soon after, the commencement of the Theological Session ; and the Examination in the Second Department at, or soon after, the close of the Theological Session—power being reserved to the Senatus Academicus, should they see cause, to appoint the examination in both departments to take place at either of these periods.

IX. The Fee for examination shall be Three Guineas, payable in advance ; but when the examination is undergone on different occasions, a Fee of two Guineas shall be paid prior to the first, and the remaining One Guinea prior to the last examination.[1]

There will be an examination in both departments on Tuesday, 28th October 1890, and two following days; and also on Wednesday, 25th March 1891, and two following days. (28th October and 25th March), Hebrew and Apologetics ; (29th October and 26th March), Ecclesiastical History and Divinity ; (30th October and 27th March), Biblical Criti-

[1] Every Candidate must matriculate before Examination or Graduation. He is also required before Graduation to pay the Fee of £1 for Registration as a member of the General Council, now made compulsory by Act of Parliament.

cism, beginning each day at 10 A.M., and allowing three hours for each Subject. Candidates are required to communicate their names, together with evidence of their being qualified in terms of the above Regulations, to the Dean of the Faculty of Divinity, at least one week before the day appointed for the Examination, and to pay the fees[1] at the Matriculation Office on or before 21st October 1890, and on or before 17th March 1891, for the Examinations in October and March respectively.

The subjects of examination are as follows :—

DEPARTMENT I.

I. *Hebrew*—
- (1.) Questions in Grammar.
- (2.) Translation into Hebrew Prose.
- (3.) Second Book of Kings, chapters xiv. to end.
- (4.) Psalms i. to xx. inclusive.
- (5.) Obadiah. Micah. Habakkuk.

Some critical knowledge of the text of the books prescribed is required.

II. *Apologetic Theology*—
- (1.) Proofs of the Being of God.
- (2.) Miracles.
- (3.) The Internal Evidences of Revelation.

DEPARTMENT II.

I. *Ecclesiastical History*—
- (1.) The Main Facts in the Development of the Constitution, Doctrine, and Worship of the Church to 381 A.D. (2.) The History of the Church in Scotland during the 17th Century.

II. *Systematic Theology*—
- (1.) The Person and Work of the Holy Spirit.
- (2.) The Doctrine of the Atonement.
- (3.) The Christian Doctrine of a Future State.

III. *Biblical Criticism and Biblical Antiquities*—

Manuscripts, Versions, and Disputed Passages of the New Testament. (As in "Scrivener's Introduction," Third Edition.)

Introduction to the Poetical and Prophetical Books of the Old Testament.

"The Gospels:" The Pastoral Epistles, and Controversies regarding them. Canonicity, part iv.. pp. 53-99.

[1] When names are not entered, and fees paid, on or before the stated dates, a late-entry fee of ten shillings must be paid before the candidate can be admitted to examination. A candidate is not held to be entered for the examination until his name is entered, the fee paid, and all the necessary certificates, &c., lodged.

Examination Papers.

DEPARTMENT I.

I.—HEBREW.

Tuesday, October 29, 1889.—10 *to* 1 *o'clock.*

I. Translate the following into Hebrew:—

One of the men of the city came in the morning and said to the servants of the king, Where is the king that I may speak with him? But they answered, What hast thou to do with the king? And they seized him and thrust him away, for he said, I will not tell the matter to anyone but to the king only. Now the king was sitting in his bedroom, but when it was told him that his servants had sent the man away, he was much put about over the matter, and he called them and said, Why have ye so acted? Seek the man and bring him to me. Take care not to wait on me so long as ye have not found him; for he was afraid lest people should think that he took no concern with the poor among the people. The servants, therefore, went out from the king, and finding that the man had returned to the city, they sought him there, making inquiries of everyone whom they met whether he had seen so and so.

II. (*a*) Point the following:—

1 ולאחאב שבעים בנים בשמרון ויכתב יהוא ספרים וישלח שמרון אל־שרי
2 יזרעאל הזקנים ואל־האמנים אחאב לאמר: ועתה כבא הספר הזה אליכם
3 ואתכם בני אדניכם ואתכם הרכב והסוסים ועיר מבצר והנשק: וראיתם
הטוב והישר מבני אדניכם ושמתם על־כסא אביו והלחמו על־בית
אדניכם:

(*b*) Translate the above.

(*c*) What text corresponds to Lucian's rendering of part of verse 1, *πρὸς τοὺς στρατηγοὺς τῆς πόλεως καὶ πρὸς τοὺς πρεσβυτέρους*? Shew how the present Hebrew text may be a corruption of this.

III. (*a*) Translate 2 Kings iv. vv. 5-7 and 42-44.

(*b*) Point מיצקת and נשיבי (K'thîbh) and write out the Q'rê. In the case of the first word parse both the forms, in the case of the second analyse both.

(*c*) Give another pointing and rendering of the last clause of verse 7.

(*d*) Where and for what reason is the text of verse 42 suspected to be corrupt? Can you suggest a suitable emendation?

IV. (*a*) Translate Ecclesiastes iii. 14 to end.

(*b*) Which of these verses is supposed to be an interpolation by a later hand, and on what grounds?

(*c*) Have you any remarks to offer on the following:

יָרֵא מִלִּפְנֵי (v. 14) אֶת־נִרְדָּף (v. 15) מְקוֹם הַמִּשְׁפָּט (v. 16)

לְבָרָם הָאֱלֹהִים, לִרְאוֹת, הֵמָּה לָהֶם (v. 18) מִי יָבִיא and מֶה (v. 22)?

(*d*) Discuss the punctuation and interpretation of verse 21.

(*e*) How has the Septuagint rendering of מִקְרֶה בְנֵי וג׳ by *συνάντημα υἱῶν τοῦ ἀνθρώπου καὶ συνάντημα τοῦ κτήνους* originated; and accepting this view, how may the first half of the verse be rendered?

(*f*) What change is possible on the Massoretic text of 17b.? Translate the clause, giving effect to the change.

(*g*) Remark on the phrase תַּחַת הַשֶּׁמֶשׁ, mention one or two other expressions that have been referred to the same class, and give a short account of the theory in support of which they are cited.

(*h*) Mention the three principal dates suggested by critics for the origin of Ecclesiastes, give the *distinctive* arguments for each, and the names of representative supporters of each view.

V. (*a*) Translate Ecclesiastes xii. 8 to end.

(*b*) On the view that verse 8 does not belong to the Epilogue of Ecclesiastes, but to the body of the work, have you any remark to offer as to the text of the verse?

(*c*) State the grounds on which it is maintained that the Epilogue was added to the book by a later hand.

(*d*) Remark on וְכָתוּב, and give another rendering of the clause.

(*e*) Can you suggest another punctuation and rendering of verse 11 than the Massoretic?

(*f*) Remark on בַּעֲלֵי אֲסֻפּוֹת and זֶה כָּל־הָאָדָם.

(*g*) Give various renderings of first four words of verse 13.

VI. (*a*) Translate Canticles v. 4-11.

b) Remark on כֶּתֶם פָּז and תַּלְתַּלִּים.

(*c*) Note the grammatical irregularities in verse 8, and write out the regular forms; remark on the punctuation of הִשְׁבַּעְתָּנִי, שְׁחוֹלָה, and on the phrase הַיָּפָה בַּנָּשִׁים.

(*d*) Compare the use of שֶׁ- in Canticles and Ecclesiastes, and remark on the difference.

(*e*) State the argument for the North-Israelite authorship of Canticles about 950 B.C.

Tuesday, March 25, 1890.—10 *to* 1 *o'clock.*

I. Translate into Hebrew :—

After the removal by the king of the altars of Yahweh there came famine years. And at the end of three years the people cried to the king on account of the famine, saying, Speak for us to the man of God, and tell him that we have nothing in our houses. The king consulted with his servants whether anything should be done, and they said, The people are of opinion that this famine is not from your gods, but from Yahweh. So now, if you seek the prophet (well); but if not, it is certain that the people will curse you. Then the king walked up and down in the place where he was three or four times, and without further inquiry answered, Lead me to him that I may hear what he shall say. The prophet heard this thing, and went up to meet the king. And the king, as soon as he saw the prophet, said, Did I not command you not to deceive my people? The prophet rejoined, Indeed it is not I who have deceived them, but you have led them astray in that you have not taken care to walk in the law of Yahweh. And now, O king, can it be that you said I wish there were some one to tell me whether Yahweh is able to stay this famine or the gods whom my fathers invoked?

II. Point the following :—

1, 2 ויאמר האחד הואל נא ולך את עבדיך ויאמר אני אלך: וילך אתם
3 ויבאו הירדנה וינזרו העצים: ויהי האחד מפיל הקורה ואת הברזל נפל
4 אל המים ויצעק ויאמר אהה אדני והוא שאול: ויאמר איש האלהים אנה
5 נפל ויראהו את המקום ויקצב עץ וישלך שמה ויצף הברזל: ויאמר הרם לך וישלח ידו ויקחהו:

(*a*) Translate these verses.

(*b*) Remark on את הברזל (v. 3.) Can you suggest any other reading or any textual emendation in the first part of this verse?

III. Translate the following extracts—

1.

1 וַיַּשְׁבִּימוּ בַבֹּקֶר וְהִנֵּה כֻלָּם פְּגָרִים מֵתִים וַיֵּרָא מוֹאָב מִנֶּגֶד אֶת־הַמָּיִם
2 אֲדֻמִּים כַּדָּם: וַיֹּאמְרוּ דָּם זֶה הֶחֱרֵב נֶחֱרְבוּ הַמְּלָכִים וַיִּכּוּ אִישׁ אֶת־רֵעֵהוּ
3 וְעַתָּה לַשָּׁלָל מוֹאָב: וַיָּבֹאוּ אֶל־מַחֲנֵה יִשְׂרָאֵל וַיָּקֻמוּ יִשְׂרָאֵל וַיַּכּוּ אֶת־מוֹאָב
וַיָּנֻסוּ מִפְּנֵיהֶם וַיַּכּוּ־בָהּ וְהַכּוֹת אֶת־מוֹאָב:

(*a*) The Q'rê in the last verse is ויכו, what is the K'thîbh? What would be the Hebrew corresponding to the Septuagint rendering of the last clause?—

καὶ εἰσῆλθον εἰσπορευόμενοι καὶ τύπτοντες τὴν Μωὰβ.

What would you suggest as the correct reading?

(*b*) Parse הֶחֱרֵב (v. 2), remark on the idiom, and notice the Septuagint rendering *αἷμα τοῦτο τῆς ῥομφαιάς.*

2.

1 וַיֹּאמֶר יְהוֹאָשׁ אֶל־הַכֹּהֲנִים כֹּל כֶּסֶף הַקֳּדָשִׁים אֲשֶׁר יוּבָא בֵּית־יְהוָה
כֶּסֶף עוֹבֵר אִישׁ כֶּסֶף נַפְשׁוֹת עֶרְכּוֹ כָּל־כֶּסֶף אֲשֶׁר יַעֲלֶה עַל לֵב־אִישׁ לְהָבִיא
2 בֵּית יְהוָה: יִקְחוּ לָהֶם־הַכֹּהֲנִים אִישׁ מֵאֵת מַכָּרוֹ וְהֵם יְחַזְּקוּ אֶת־בֶּדֶק הַבַּיִת
לְכֹל אֲשֶׁר־יִמָּצֵא שָׁם בֶּדֶק:

Explain כֶּסֶף עוֹבֵר (v. 1), and notice the expression *ἀνὴρ ἀπὸ τῆς πράσεως αὐτοῦ* in the Septuagint translation of verse 2.

IV. (*a*) Translate:—

1 הִשְׁבַּעְתִּי אֶתְכֶם בְּנוֹת יְרוּשָׁלַם בִּצְבָאוֹת אוֹ בְּאַיְלוֹת הַשָּׂדֶה אִם־תָּעִירוּ
2 וְאִם־תְּעוֹרְרוּ אֶת־הָאַהֲבָה עַד שֶׁתֶּחְפָּץ: קוֹל דּוֹדִי הִנֵּה־זֶה בָּא מְדַלֵּג
3 עַל־הֶהָרִים מְקַפֵּץ עַל־הַגְּבָעוֹת: דּוֹמֶה דוֹדִי לִצְבִי אוֹ לְעֹפֶר הָאַיָּלִים הִנֵּה־זֶה
4 עוֹמֵד אַחַר כָּתְלֵנוּ מַשְׁגִּיחַ מִן־הַחַלֹּנוֹת מֵצִיץ מִן־הַחֲרַכִּים: עָנָה דוֹדִי וְאָמַר

5 לִי קוּמִי לָךְ רַעְיָתִי יְפָתִי וּלְכִי־לָךְ: כִּי־הִנֵּה הַסְּתָו עָבָר הַגֶּשֶׁם חָלַף הָלַךְ לוֹ:
6, 7 הַנְּצָנִים נִרְאוּ בָאָרֶץ עֵת הַזָּמִיר הִגִּיעַ וְקוֹל הַתּוֹר נִשְׁמַע בְּאַרְצֵנוּ: הַתְּאֵנָה
חָנְטָה פַּגֶּיהָ וְהַגְּפָנִים סְמָדַר נָתְנוּ רֵיחַ קוּמִי לְכִי רַעְיָתִי יְפָתִי וּלְכִי־לָךְ:
8 יוֹנָתִי בְּחַגְוֵי הַסֶּלַע בְּסֵתֶר הַמַּדְרֵגָה הַרְאִינִי אֶת־מַרְאַיִךְ הַשְׁמִיעֵנִי אֶת־קוֹלֵךְ
9 כִּי־קוֹלֵךְ עָרֵב וּמַרְאַיִךְ נָאוֶה: אֲחֻזוּ־לָנוּ שְׁעָלִים שְׁעָלִים קְטַנִּים מְחַבְּלִים
10, 11 כְּרָמִים וּכְרָמֵינוּ סְמָדַר: דּוֹדִי לִי וַאֲנִי לוֹ הָרֹעֶה בַּשּׁוֹשַׁנִּים: עַד שֶׁיָּפוּחַ
הַיּוֹם וְנָסוּ הַצְּלָלִים סֹב דְּמֵה־לְךָ דוֹדִי לִצְבִי אוֹ לְעֹפֶר הָאַיָּלִים עַל־הָרֵי
בָתֶר:

(*a*) Note the grammatical peculiarities in verse 1, and write out the regular forms.

(*b*) Account for the Septuagint rendering of the first part of this verse—

Ὤρκισα ὑμᾶς θυγατέρες Ἰερουσαλὴμ ἐν δυνάμεσι καὶ ἐν ἰσχύσεσι τοῦ ἀγροῦ.

(*c*) Note the Hebrew words found only in this passage.

(*d*) Write the K'thîbh in vv. 7 and 8, and account for the Q'rê in each case.

(*e*) Remark on בְּחַגְוֵי (v. 8), הַצְּלָלִים (v. 11), and on the use of לָךְ and לְךָ in this extract.

(*f*) Critically remark on the last verse, noticing specially the last expression הָרֵי בָתֶר.

V. Translate :—

1 אֶת־כָּל־זֶה רָאִיתִי וְנָתוֹן אֶת־לִבִּי לְכָל־מַעֲשֶׂה אֲשֶׁר נַעֲשָׂה תַּחַת הַשָּׁמֶשׁ עֵת
2 אֲשֶׁר שַׁלַּט הָאָדָם בְּאָדָם לְרַע לוֹ: וּבֵכֵן רָאִיתִי רְשָׁעִים קְבֻרִים וּבָאוּ וּמִמְּקוֹם
3 קָדוֹשׁ יְהֻלְּכוּ וְיִשְׁתַּכְּחוּ בָעִיר אֲשֶׁר כֵּן־עָשׂוּ גַּם־זֶה הֶבֶל: אֲשֶׁר אֵין־נַעֲשָׂה
פִּתְגָם מַעֲשָׂה הָרָעָה מְהֵרָה עַל־כֵּן מָלֵא לֵב בְּנֵי־הָאָדָם בָּהֶם לַעֲשׂוֹת רָע:
4 אֲשֶׁר חֹטֶא עֹשֶׂה רָע מְאַת וּמַאֲרִיךְ לוֹ כִּי גַם־יוֹדֵעַ אָנִי אֲשֶׁר יִהְיֶה־טּוֹב

5 לִירְאֵי הָאֱלֹהִים אֲשֶׁר יִרְאוּ מִלְּפָנָיו׃ וְטוֹב לְאֹ־יִהְיֶה לָרָשָׁע וְלֹא־יַאֲרִיךְ
6 יָמִים כַּצֵּל אֲשֶׁר אֵינֶנּוּ יָרֵא מִלִּפְנֵי אֱלֹהִים׃ כַּאֲשֶׁר נָתַתִּי אֶת־לִבִּי לָדַעַת
חָכְמָה וְלִרְאוֹת אֶת־הָעִנְיָן אֲשֶׁר נַעֲשָׂה עַל־הָאָרֶץ כִּי גַם בַּיּוֹם וּבַלַּיְלָה שֵׁנָה
7 בְּעֵינָיו אֵינֶנּוּ רֹאֶה׃ וְרָאִיתִי אֶת־כָּל־מַעֲשֵׂה הָאֱלֹהִים כִּי לֹא יוּכַל הָאָדָם
לִמְצוֹא אֶת־הַמַּעֲשֶׂה אֲשֶׁר נַעֲשָׂה תַּחַת־הַשָּׁמֶשׁ בְּשֶׁל אֲשֶׁר יַעֲמֹל הָאָדָם
לְבַקֵּשׁ וְלֹא יִמְצָא וְגַם אִם־יֹאמַר הֶחָכָם לָדַעַת לֹא יוּכַל לִמְצֹא׃

(*a*) Remark on וְנָתוֹן (v. 1), פִּתְנָם (v. 3), הַטֶּה (v. 4), and on בְּשֶׁל אֲשֶׁר (v. 7).

(*b*) Give different renderings of v. 2, and notice any emendation which has been suggested on the existing text.

(*c*) What would be the Hebrew corresponding to the Septuagint rendering of the first part of verse 3?—
Ὅτι οὐκ ἔστι γινομένη ἀντίῤῥησις ἀπὸ τῶν ποιούντων τὸ πονηρὸν ταχύ.

(*d*) State the grounds on which it has been held that verses 4 and 5 contain interpolations. Have you any suggestion to offer as to the original text of these verses?

VI. Translate :—

1 שַׁבְתִּי וְרָאָה תַּחַת־הַשֶּׁמֶשׁ כִּי לֹא לַקַּלִּים הַמֵּרוֹץ וְלֹא לַגִּבּוֹרִים הַמִּלְחָמָה
וְגַם לֹא לַחֲכָמִים לֶחֶם וְגַם לֹא לַנְּבֹנִים עֹשֶׁר וְגַם לֹא לַיְדִעִים חֵן כִּי־עֵת וָפֶגַע
2 יִקְרֶה אֶת־כֻּלָּם׃ כִּי גַם לֹא־יֵדַע הָאָדָם אֶת־עִתּוֹ כַּדָּגִים שֶׁנֶּאֱחָזִים בִּמְצוֹדָה
רָעָה וְכַצִּפֳּרִים הָאֲחוּזוֹת בַּפָּח בָּהֶם יוּקָשִׁים בְּנֵי הָאָדָם לְעֵת רָעָה כְּשֶׁתִּפּוֹל
3, 4 עֲלֵיהֶם פִּתְאֹם׃ גַּם־זֶה רָאִיתִי חָכְמָה תַּחַת הַשֶּׁמֶשׁ וּגְדוֹלָה הִיא אֵלָי׃ עִיר
קְטַנָּה וַאֲנָשִׁים בָּהּ מְעָט וּבָא־אֵלֶיהָ מֶלֶךְ גָּדוֹל וְסָבַב אֹתָהּ וּבָנָה עָלֶיהָ
5 מְצוֹדִים גְּדוֹלִים׃ וּמָצָא בָהּ אִישׁ מִסְכֵּן חָכָם וּמִלַּט־הוּא אֶת־הָעִיר בְּחָכְמָתוֹ
6 וְאָדָם לֹא זָכַר אֶת־הָאִישׁ הַמִּסְכֵּן הַהוּא׃ וָאֹמַרְתִּי אֲנִי טוֹבָה חָכְמָה

7 מִגְּבוּרָה וְחָכְמַת הַמִּסְכֵּן בְּזוֹיָה וּדְבָרָיו אֵינָם נִשְׁמָעִים׃ דִּבְרֵי חֲכָמִים
8 בְּנַחַת נִשְׁמָעִים מִזְּעָקַת מוֹשֵׁל בַּכְּסִילִים׃ טוֹבָה חָכְמָה מִכְּלֵי קְרָב וְחוֹטֵא
9 אֶחָד יְאַבֵּד טוֹבָה הַרְבֵּה׃ זְבוּבֵי מָוֶת יַבְאִישׁ יַבִּיעַ שֶׁמֶן רוֹקֵחַ יְקַר מֵחָכְמָה
10 מִכָּבוֹד סִכְלוּת מְעָט׃ יֵשׁ רָעָה רָאִיתִי תַּחַת הַשָּׁמֶשׁ כִּשְׁגָגָה שֶׁיּוֹצֵא מִלִּפְנֵי
11 הַשַּׁלִּיט׃ נִתַּן הַכְּסֶל בַּמְּרוֹמִים רַבִּים וַעֲשִׁירִים בַּשֵּׁפֶל יֵשֵׁבוּ׃

(*a*) Remark on שָׁבְתִּי וְרָאָה (v. 1), פֶּתִי (v. 2), מִסְכֵּן (v. 5), קְרָב (v. 8), and on the syntax of verses 9 and 10.

(*b*) Parse יוּקָשִׁים (v. 2). Can you suggest any emendation on the text here?

(*c*) Remark on הַכֶּסֶל (last verse). What has been proposed to be read instead?

(*d*) How would the verbs in verse 4 be expressed in an old Hebrew text?

(*e*) Mention some of the leading peculiarities of the style of Koheleth, and give a short list of the more common words which occur in Biblical Hebrew *only in this Book*.

II. APOLOGETICS.

Tuesday, October 29, 1889.—2 *to* 5 *o'clock.*

Materialism.

1. Define Materialism, and state what propositions it must involve or assume.

2. On what general grounds have the advocates of Materialism maintained that it is the most satisfactory of philosophical systems?

3. Give the arguments for and against believing thought to be explicable by the properties of matter, and consider whether or not a simply agnostic position in the controversy is reasonable.

4. Discuss the compatibility of the theory of Materialism with belief in a personal God and the immortality of the soul.

The Theory of Revelation.

1. How ought the term Revelation to be understood in its general sense, and in legitimate special senses?

2. How is Revelation related to Religion, Inspiration, and Miracle?
3. How may the reality of Revelation be proved or verified? State what you think are the chief erroneous views entertained on this point.
4. Point out the distinctive features in the Theories of Revelation held by any three eminent modern German theologians.

Internal Evidences.

1. Give reasons for your answers to the two following questions:—(*a*) Has all Christian truth such self-evidence that it can dispense with all other evidence? (*b*) Is the spiritual life of the Christian in itself an adequate evidence for the Christian truth on which it is based?
2. Give a sketch of the argument for the perfection of Christ's character.
3. Discuss the subjective presuppositions of all argument from Internal Evidences.
4. Examine carefully the following statement:—"The evidence derived from the internal character of a religion, whatever may be its value within its proper limits, is, as regards the divine origin of the religion, purely negative."

Tuesday, March 25, 1890.—2 *to* 5 *o'clock.*

Materialism.

1. Are Sensationalism and Materialism consistent with each other Are they self-consistent? How are they related?
2. Can a completely materialistic doctrine of evolution be truly scientific and philosophically adequate? Discuss the question.
3. Examine the materialistic doctrine from the contemporary standpoints of (1) psychophysics, (2) introspective psychology, (3) teleology;

Or, State the materialistic and non-materialistic theories which have been advanced to explain the origin of the Soul or Spirit; and examine their respective value.

4. Critically estimate and compare the doctrines of (1) Universal Materialism, (2) Universal Immaterialism, and (3) Christian Spiritualism as in the New Testament, especially in the Pauline Epistles. Consider whether the third doctrine may be maintained as more in harmony with experience and science than either of the other doctrines.

The Theory of Revelation.

1. Analyse the idea of Revelation, and indicate or describe the forms of Revelation.
2. State how Revelation is related to Religion and to Inspiration.
3. What are the essential and specific characteristics of the Christian Revelation?

4. Comment historically and critically on the following statements: —(1) "A revelation in the sense of the doctrine of the Church, is, like miracle, an individual act of God in time which is incompatible with the immutability of His Nature;" (2) "The revealing activity of God is only one form of His redemptive activity;" (3) "God reveals nothing but Himself."

The Internal Evidences of Revelation.

1. Describe in a general way what you regard as the chief Internal Evidences of Christianity.

2. How are the Internal Evidences of Christianity related to (*a*) Historical Criticism as to the age, authorship, and credibility of the books of the New Testament, and (*b*) the External Evidences?

3. Discuss the following statement:—"The intellectual difficulties which Rationalism discovers in the contents of Revelation are such as no system of Rational Theology can hope to remove; for they are inherent in the constitution of Reason itself."

4. Give reasons for accepting or rejecting the following position:— "The human mind is competent to sit in *moral* and *spiritual* judgment on a proposed revelation; and to decide, if the case seem to require it, in the following tone: This doctrine attributes to God that which we should all call harsh, cruel, or unjust in man: it is therefore intrinsically inadmissible."

DEPARTMENT II.

I. ECCLESIASTICAL HISTORY.

Wednesday, 30th October 1889.—10 *to* 1 *o'clock.*

1. Account for the existence of a Celtic form of Christianity, and narrate its history both in the islands and on the continent.

2. Describe the spread and decline of Arian Christianity among the barbarian nations.

3. Give a general account of the earlier Christology of the Neo-Alexandrian and Antiochian schools, respectively. Mention and clearly describe the heresies that arose from each. Enumerate, with dates, the steps by which the Church arrived at an orthodox Christology. Sum up the result, and show how far the teaching of each school was recognised.

4. What were the Origenistic controversies? Narrate their history.

5. What were the Tria Capitula? Narrate the history of the two controversies in which they figured, and show clearly the circumstances that led to the second controversy.

6. Give an outline of the political history of the decline of heathenism between Constantine and Justinian, and indicate how far in your opinion the decline was due to repression, how far to internal decay.

7. Give a general characterisation of the Apologetic Theology of this period, mention the names and works of its principal representatives, and describe Augustine's principal apologetic work.

Or,

Give a general account of Western Theology and its representatives during the fourth and fifth centuries.

8. Remark on the development of the doctrine of the Sacraments in general, and give a particular account of the various views entertained as to the Lord's Supper.

9. What are the principal liturgies of the Eastern and Western Churches, respectively, belonging to this period; tell what you know about each; mention the characteristic differences between the Roman and Oriental liturgy, and describe the structure of an Oriental liturgy.

10. Describe the architectural features of a Christian Church of this period.

11. Give an account of the ecclesiastical and extra-ecclesiastical attempts at the defence and reform of the Roman Catholic Church in Scotland between 1500 and 1560.

12. Narrate the events of Knox's visit to Scotland in 1555-56, and remark as to its effect on the progress of the Reformation.

13. State what you know of the enactments of the Parliaments of 1560 and 1567 affecting the Church, and remark on their importance.

14. Give a full account of the origin, adoption, contents, and use of the book referred to in the First Book of Discipline as the "Book of Common Prayer."

15. Compare generally the First and Second Books of Discipline.

Wednesday, March 26, 1890.—10 *to* 1 *o'clock.*

1. Give an account of the grades and duties of the clergy in the beginning of the fourth century, and sketch the history of the rise and development of the Patriarchate and its powers.

2. What were the principal advances made by the See of Rome between 325 and 461 in the direction of Primacy? What circumstances co-operated in favour of Rome?

3. Tell shortly what you know of Monasticism in the fourth and fifth centuries with regard to (*a*) its origin, heathen or Christian; (*b*) the general stages of its development; (*c*) the extent to which each stage was represented in the East and West respectively.

4. What are the main facts in the history of British Christianity between 596 and 664?

5. What do you know of the state of theological culture among the clergy, and of the circumstances that tend to explain it?

6. What doctrinal controversies took place in the fourth and fifth centuries? What matter or matters were in dispute in each case? Give the names of those figuring most prominently in the discussions.

7. What were the principal points of difference between Augustinianism and Pelagianism in respect of (*a*) Anthropology, and (*b*) Soteriology.

8. Give the history of the development of the Niceno-Constantinopolitan doctrine of the Trinity and of its symbolical statement.

9. What is Mysticism? Mention the principal literary mystics of the period and give an extended account of the mysticism of Dionysius Areopagita.

10. Write explanatory and historical notes on *Jus circa sacra*, *σύνοδοι οἰκουμενικαί*, *σύνοδοι ἐνδημοῦσαι*, Epistolæ decretales, Libri penitentiales.

11. Sketch the state of matters in Scotland between July 1556 and May 1559.

12. Describe the formation and importance of the English party in Scotland during the first half of the sixteenth century.

13. Give an account of the Raid of Ruthven and show how it was related to ecclesiastical history.

14. Discuss Knox's relation to the Concordat of Leith.

II. SYSTEMATIC THEOLOGY.

Wednesday, October 30, 1889.—2 *to* 5 *o'clock.*

The Doctrine of Sin.

1. What are the chief affirmations made by the Westminster Confession of Faith regarding the nature, the origin, the transmission, the prevalence, and the consequences of sin?

2. Indicate by whom, and in what ways, these affirmations have been rejected.

3. State and discuss Julius Müller's Theory of Sin.

4. Compare the Christian Doctrine of Sin with the cognate Doctrines of Manichæism, Buddhism, and modern Pessimism.

The Person and Work of the Holy Spirit.

1. State the objections most frequently urged against the Personality of the Holy Spirit, and the answers generally given to them.

2. Mention what operations are attributed in the New Testament to the Holy Spirit, and quote or refer distinctly in regard to each operation to at least one proof-passage.

3. Explain the position and function assigned by the Reformed Theology to the Holy Spirit in the Economy of Salvation.

4. Discuss the question of the *immanence* of the Holy Spirit in its various relations.

The Doctrine of the Atonement.

1. Remark on the etymology, biblical equivalents, and theological usage of the term Atonement.

2. Give a brief view of the history of the Doctrine of Atonement during the Patristic period.

3. State and criticise the Rectoral or Governmental Theory of the Atonement.

4. Discuss the relation of the Doctrine of the Atonement to (1) the Justice of God, (2) the Incarnation, (3) the Doctrine of Sin.

Wednesday, March 26, 1890.—2 *to* 5 *o'clock.*

THE DOCTRINE OF SIN.

1. What features of the Biblical view of sin may be traced in the account of its origin in Gen. iii. 1-7?

2. Classify and briefly describe the theories which have been propounded regarding the connection of Adam's sin with that of the Race.

3. Examine (1) the distinction between venial and mortal sins, (2) the grounds of the remissibility of sin, (3) the relation of sin to the will.

4. "Filius Dei in mundum non venisset, nec humanam naturam assumpsisset, si homo in statu integritatis perstitisset." Review this thesis historically, dogmatically, and scripturally.

THE PERSON AND WORK OF THE HOLY SPIRIT.

1. Give a brief account of the development of the Doctrine of the Spirit and his Work in the early and medieval Church.

2. Describe generally the work of the Spirit in revelation, regeneration, and sanctification, and indicate the Scriptural authority for your statements.

3. "Opus Spiritus Sancti in hac vita tantummodo in nobis inchoatur, in altera demum vita absolvetur et perficietur." Examine the grounds of this position, and how far the latter clause may be legitimately unfolded in detail.

4. Give some account of the speculative constructions of the Doctrine of the Holy Spirit by Schelling and Hegel.

THE DOCTRINE OF THE ATONEMENT.

1. How was the sacrifice of Christ related to heathen and Jewish sacrifices?

2. Point out some of the chief errors to be avoided in theorising on the Atonement.

3. "Facta est expiatio satisfactione vicaria." Give a historical and critical review of this dogma, and state the grounds of its rejection by the Socinians.

4. Examine the theories of the Atonement maintained by Schleiermacher, Hofmann, and Ritschl.

III.—BIBLICAL CRITICISM.

Thursday, 31st October 1889.—10 *to* 1 *o'clock.*

1. St John i. 18. ὁ μονογενὴς υἱὸς ὁ ὢν εἰς τὸν κόλπον τοῦ πατρὸς κεῖνος ἐξηγήσατο.

The critical materials may be thus grouped :—

For this reading of the *Textus Receptus* the chief authorities are $AC^3\Gamma\Delta\Pi$, all the cursives but one; all the Latin versions, all the Syriac save the Peshito, etc.; Athanasius, Chrysostom, and the Latin fathers from Tertullian.

For the reading θεός are ℵ BC*L; Coptic, Syriac (Peshito); Clem. Alex., Epiphanius and others.

Taking this as your basis—

(*a*) Give an account of the MSS. and versions specified by name in the foregoing.

(*b*) Sum up the evidence and say on which side it preponderates in your opinion.

(*c*) How would you expect Tregelles, Tischendorf, Westcott and Hort, to decide in conformity with their respective principles and practice?

2. What Prophets are admitted as Post-exilic (including Exilic), which as Pre-exilic, and which are of disputed date in whole or in part?

3. Give an outline of the modern controversies as to "Isaiah," "Zechariah," and "Joel." In the case of the first two state the chapters ascribed by many critics to other dates than those of the traditional authors. Mention finally the principal points of conflict in the controversy concerning each of the three.

4. Discuss the critical problem of Zechariah.

5. Divide Jeremiah i.-li. into groups of consecutive chapters, so as to shew in general how far the present arrangement observes a principle of chronological sequence, how far it does not. Remark also on the chronological relation of the groups to each other.

6. Compare and remark on the two forms in which Jeremiah has been handed down to us.

7. On what grounds and by whom has the Pauline authorship of the Epistle to the Colossians been denied?

8. Describe the principal forms of the theory of mediate Pauline authorship, note the leading ground of each, and remark as to validity.

9. State in particular how the words πλήρωμα, σοφία, πίστις, σταυρός, are used in the Epistle on the one hand, and in the system of Valentinus on the other; and examine the argument which makes the Epistle of later date than that system.

10. State shortly your view of the Colossian heresy; give the basis you find for it in the Epistle; shew how far it is possible to verify it historically, and sketch the verification.

11. Translate and comment on—

Εἰ ἀπεθάνετε σὺν Χριστῷ ἀπὸ τῶν στοιχείων τοῦ κόσμου τί ὡς ζῶντες ἐν κόσμῳ δογματίζεσθε μὴ ἅψῃ μηδὲ γεύσῃ μηδὲ θίγῃς ἃ ἐστιν πάντα εἰς φθορὰν τῇ ἀποχρήσει κατὰ τὰ ἐντάλματα καὶ διδασκαλίας τῶν ἀνθρώπων ἅτινά ἐστιν λόγον μὲν ἔχοντα σοφίας ἐν ἐθελοθρησκίᾳ καὶ ταπεινοφροσύνῃ καὶ ἀφειδίᾳ σώματος οὐκ ἐν τιμῇ τινὶ πρὸς πλησμονὴν τῆς σαρκός.

Punctuate according to your own judgment, and deal most particularly with the last clause.

12. Translate and explain the bearing on the Pauline Epistles of the following passage :—

. . . . Πέτρον, ὃς διὰ ζῆλον ἄδικον οὐχ ἕνα οὐδὲ δύο, ἀλλὰ πλείονας ὑπήνεγκεν πόνους, καὶ οὕτω μαρτυρήσας ἐπορεύθη εἰς τὸν ὀφειλόμενον τόπον τῆς δόξης. Διὰ ζῆλον καὶ ἔριν Παῦλος ὑπομονῆς βραβεῖον ἔδειξεν, ἑπτάκις δεσμὰ φορέσας, φυγαδευθείς, λιθασθείς, κήρυξ γενόμενος ἔν τε τῇ ἀνατολῇ καὶ ἐν τῇ δύσει, τὸ γενναῖον τῆς πίστεως αὐτοῦ κλέος ἔλαβεν, δικαιοσύνην διδάξας ὅλον τὸν κόσμον, καὶ ἐπὶ τὸ τέρμα τῆς δύσεως ἐλθών, καὶ μαρτυρήσας ἐπὶ τῶν ἡγουμένων, οὕτως ἀπηλλάγη τοῦ κόσμου καὶ εἰς τὸν ἅγιον τόπον ἐπορεύθη, ὑπομονῆς γενόμενος μέγιστος ὑπογραμμός.

Thursday, March 27, 1890.—10 *to* 1 *o'clock.*

1. Give an account of the prophetical books of the Old Testament under the following heads :—

(*a*) Names of the authors, birth-place, and region or kingdom in which was their sphere of work.

(*b*) The traditional period of their activity.

(*c*) List of important cases of disputed authorship and (or) date.

(*d*) Illustrative particulars in the case of two of the prophetical books of the changes resulting in regard to hitherto accepted authorship and date, if current critical arguments are adopted.

2. What is the amount of law, ritual and historical narrative implied in the words of the prophets of the eighth century?

3. Which was the earliest, which the latest of the prophets in the prophetical section of the Hebrew Bible? State the possible claimants, with dates. Argue for your view and against any that come into competition with it.

4. What is your view of the origin of the collection of Psalms in the Psalter, and of the principle on which the Psalms are grouped? Does the position of a Psalm in a particular "Book" give any presumption as to its age, or can its position be accounted for apart from mere date?

5. How far can the date and authorship of individual Psalms be ascertained, and from what materials?

6. Examine the question whether there are Maccabean Psalms.

7. How far is there a Messianic element in the Book of Psalms? Give proofs of your position.

8. Consider the literary relation between Colossians and Ephesians under the following heads :—

(*a*) Nature and amount of the relation.

(*b*) Your own conclusion and its grounds.

9. With what Gnostic system in particular did the Tübingen critics connect the terms used in the Epistle to Colossians? Criticise some of the particulars.

10. Show how Essenism helps to decide the question as to the Pauline authorship of Colossians.

11. What are the points of difference in form and matter between Colossians and so-called genuine Paulinism? How would you meet the objection drawn from them?

12. Translate—

ὅς ἐστιν εἰκὼν τοῦ θεοῦ τοῦ ἀοράτου, πρωτότοκος πάσης κτίσεως, ὅτι ἐν αὐτῷ ἐκτίσθη τὰ πάντα ἐν τοῖς οὐρανοῖς καὶ ἐπὶ τῆς γῆς, τὰ ὁρατὰ καὶ τὰ ἀόρατα, εἴτε θρόνοι εἴτε κυριότητες εἴτε ἀρχαὶ εἴτε ἐξουσίαι· τὰ πάντα δι' αὐτοῦ καὶ εἰς αὐτὸν ἔκτισται· καὶ αὐτὸς ἔστιν πρὸ πάντων καὶ τὰ πάντα ἐν αὐτῷ συνέστηκεν, καὶ αὐτός ἐστιν ἡ κεφαλὴ τοῦ σώματος, τῆς ἐκκλησίας· ὅς ἐστιν [ἡ] ἀρχή, πρωτότοκος ἐκ τῶν νεκρῶν, ἵνα γένηται ἐν πᾶσιν αὐτὸς πρωτεύων, ὅτι ἐν αὐτῷ εὐδόκησεν πᾶν τὸ πλήρωμα κατοικῆσαι καὶ δι' αὐτοῦ ἀποκαταλλάξαι τὰ πάντα εἰς αὐτόν, εἰρηνοποιήσας διὰ τοῦ αἵματος τοῦ σταυροῦ αὐτοῦ, [δι' αὐτοῦ] εἴτε τὰ ἐπὶ τῆς γῆς εἴτε τὰ ἐν τοῖς οὐρανοῖς· (West.-Hort.)

Remark on *εἰκών, πρωτότοκος, κτίσις, τὰ πάντα, εἴτε θρόνοι εἴτε κυριότητες εἴτε ἀρχαὶ εἴτε ἐξουσίαι*, and the use made of them in critical controversies.

13. Mark ix. 44, 46. *ὅπου ὁ σκώληξ οὐ τελευτᾷ καὶ τὸ πῦρ οὐ σβέννυται.* (Textus Receptus.)

For insertion, ΑΔΝΧΓΠΣΦ, etc. ; Latt. (Vet. codd. pler.—Vulg.) ; Syrr (Pesch-Harcl.) Goth. Aeth. ; Aug.

For omission, ℵBCLΔ, minusc. aliq ; k Memph. Arm.

(*a*) Arrange the evidence for each reading according to the age of the witnesses.

(*b*) Give names, contents, and place of each MS., and a short account of the two earliest versions mentioned.

(*c*) Tregelles accepts Text. Rec. ; Tischendorf rejects it. Show how the critical principles of each led to his conclusion, and note the cause of the disagreement.

(*d*) Separate, according to Westcott-Hort, the evidence into Syrian, Western, Alexandrian, and Neutral, and deal with it. Note the principal difficulty in the way of effecting this separation, and show how it is overcome.

14. Translate the following :—

Καί φαμεν τοῖς ὁμονοοῦσι τῷ Κέλσῳ, ὅτι οὐδεμίαν ἄρα φανταζόμενος σοφίαν ὁ Παῦλος ὑπερέχουσαν, ἐπηγγέλλετο σοφίαν λαλεῖν ἐν τοῖς τελείοις· ἐπειδὰν δὲ κατὰ τὸ ἑαυτοῦ θρασὺ φήσῃ, ὅτι οὐδὲν ἔχων σοφὸν ταῦτα ἐπηγγέλλετο· ἀνταποκρινούμεθα αὐτῷ, λέγοντες· Πρῶτον σαφήνισον τοῦ ταῦτα λέγοντος τὰς ἐπιστολάς· καὶ ἀνατενίσας τῷ βουλήματι ἑκάστης ἐν αὐταῖς λέξεως (φερ' εἰπεῖν τῇ πρὸς Ἐφεσίους, καὶ πρὸς Κολασσαεῖς, καὶ

τῇ πρὸς Θεσσαλονικεῖς, καὶ Φιλιππησίους, καὶ πρὸς Ῥωμαίους), ἀμφότερα δεῖξον, καὶ ὅτι νενόηκας τοὺς Παύλου λόγους, καὶ ὅτι παραστῆσαι εὐήθεις τινὰς ἢ ἠλιθίους. Ἐὰν γὰρ ἐπιδῷ ἑαυτὸν τῇ μετὰ τοῦ προσέχειν ἀναγνώσει, εὖ οἶδ' ὅτι ἢ θαυμάσεται τὸν νοῦν τοῦ ἀνδρὸς, ἐν ἰδιωτικῇ λέξει μεγάλα περινοοῦντος, ἢ μὴ θαυμάσας, αὐτὸς καταγέλαστος φανεῖται· εἴτε διηγούμενος ὡς νενοηκὼς τὸ βούλημα τοῦ ἀνδρὸς ἢ καὶ ἀντιλέγειν καὶ ἀνατρέπειν πειρώμενος ἃ ἐφαντάσθη αὐτὸν νενοηκέναι. (Origen, C. Celsum., 3. 20.)

BACHELORS OF DIVINITY.

1st August 1889.
William Carey Sage, M.A.

18th April 1890.

1 William Crawford Allan, M.A.
Francis David Brown, M.A.
Robert Burnett, M.A.
Alexander Connell, M.A.
5 James Johnstone Drummond, M.A.
John Dick Fleming, M.A.
James John Galloway, M.A.
John Cameron Lawson, M.A.
William Liddle, M.A.
10 Dugald MacEchern, M.A.
Arch. Stewart Macintyre, M.A.
Ronald Geo. Macintyre, M.A.
Earle Monteith Macphail, M.A.
Alex. Stewart Martin, M.A.
15 George Currie Martin, M.A.
John Chalmers Peat, M.A.
David John Moir Porteous, M.A.
William Roger, M.A.
Andrew Wylie Smith, M.A.
20 John Somerville, M.A.
21 Wm. Stevenson Stuart, M.A.

DEGREE OF DOCTOR OF DIVINITY (D.D.).[1]

The Degree of Doctor of Divinity is conferred *honoris causâ tantum:* —and is granted in absence in special cases only. The Register of Doctors of Divinity begins in 1709, with the names of Edmund Calamy, Daniel Williams, and Joshua Oldfield. The names of Evans, Harris, and Isaac Watts follow in 1728. The Register now includes above 300 names.

The following is a list of those who have received the Degree of Doctor of Divinity since 1885[2]:—

[1] Those to whom the Degree has been offered, if unable to be present at the Graduation Ceremonial immediately ensuing, may present themselves at any subsequent ceremonial, on giving at least a week's notice.

[2] The names of those who received the Degree, prior to 1859, will be found in the "Catalogue of the Graduates in the Faculties of Arts, Divinity, and Law of the University, since its foundation," published in 1858, and the names of those who received the Degree from 1859 to 1888, both years included, will be found in the List of Graduates, published in 1889.

1886.

Paul Geymonat
Andrew Tait
David Thorburn
George P. Fisher, D.D.
*Michael S. S. Johnstone

1887.

David Duff, LL.D.
Thomas Charles Edwards
John M'Laren
William Welsh

1888.

Thomas Brown
David Johnstone, B.A., B.D.
Alexander Oliver, B.A.
Alberto Revel

18th April 1889.

*Griffith John
Norman M. L. Walker

1st August 1889.

Rev. Archibald Henry Sayce, M.A., Fellow of Queen's College, Oxford, Deputy Professor of Comparative Philology, University, Oxford.

30th November 1889.

*Rev. Professor Abraham Kuenen, University, Leyden.

18th April 1890.

Rev. David Douglas Bannerman, Minister of the Free Church, Perth.
Rev. R. H. Lundie, M.A., Fairfield Presbyterian Church, Liverpool.
Rev. Canon J. H. Overton, Rector of Epworth.

* Conferred *in absentia.*

Bursaries, Scholarships, Fellowships, &c.

I.—BURSARIES.

A.—Presentation Bursaries.

No. of Foundation.	Year of Found.	Name of Founder.	Total Annual Income.	No. of Bursars.	Years.	Annual Allowance to each Bursar	Patrons.
I.	1703	Agnes Nairne.	£3 0 0	1	1	..	Senatus Academicus.
II.	1715	Sir James M'Lurg of Vogrie, sometime Dean of Guild of Edinburgh.	8 6 8	1	4	£8 6 8	Dean of Guild of Edinburgh, and Wm. Brown, Esq., surgeon, alternately
III.	1764	Rev. John Penman, Minister of Bothkennar.	8 0 0	1	4	8 0 0	R. G. G. Gilmour of Craigmillar.
IV.	1766	Rev. Robert Alexander, Minister of Girvan.	About 19 0 0	1	4	About 19 0 0	Kirk-Session of Girvan and Presbytery of Ayr.
V.	1838	Robert Blair, D.D., Barton St Andrews, Norfolk	14 8 0	1	4	14 8 0	Governors of George Heriot's Trust, Principal of the University, Minister of the High Church, & Minister of New Greyfriars' Church.
VI.	1838	Do. Do.	About 23 0 0	1	4	About 23 0 0	The Principal, and Profs. of Hebrew, Divinity, Church History.
VII.	1838	J. Stewart Hepburn of Colquhalzie, Esq.	13 2 6	1	3	13 2 6	Committee of the Presbytery of Edin.
VIII.	1858	Do. Do.	13 2 6	1	3	13 2 6	Do.
IX.	1864	Do. Do.	13 2 6	1	3	13 2 6	Do.

I. In abeyance at present.

II. The *M'Lurg Bursary* is tenable for four years at the Theological Classes. *Bursar*—1887, *Neil Thomson.*

III. The *Penman Bursary*—1888, *Alex. H. Christie, M.A.*

IV. This Bursary consists of the interest of £420, lent on heritable security, and of £75, 17s. of accumulated interest. It must be held by a Student from the parish of Girvan, presented by the Session; whom failing, by one within the Presbytery of Ayr, to be appointed by the Presbytery. *Bursar—Arch. D. Scott, M.A.*

V. The *Blair Bursary* can be held only by a young man who has been brought up in George Heriot's Hospital, and has become a Student of Divinity in the University of Edinburgh. The amount depends on the rate of dividend payable on the stock in which the foundation money is invested. *Bursar*—1887, *William S. Stewart, M.A.*

VI. To be applied for the benefit of a Student of Divinity, whether a graduate or not. *Bursar*—1887, *Peter MacGregor, M.A.*

VII., VIII., and IX. The sums attached to these Bursaries are payable to Divinity Students of the Church of Scotland of the first or second year towards the expense of their education at the University of Edinburgh. Each is tenable for three years. For one bursary Gaelic-speaking students have a preference; for all, Students from the Presbyteries of Weem and Auchterarder. *Bursars*—1887, *William A. Shepherd.* 1888, *A. L. Johnston, M.A.*

B.—Competition Bursaries.

No. of Foundation.	Year of Found.	Name of Founder.	Total Annual Income.	No. of Bursars.	For Years.	Annual Allowance to each Bursar.	Patrons.
I.	1646	Buchanan of that Ilk.	£20 16 8	2	3	£10 8 4	Town Council.
II.	1666	William Struthers.	13 17 9	1	3	13 17 9	Do.
III.	1685	Archibald Leighton.	7 10 0	1	3	7 10 0	Do.
IV.	1687	Andrew Ramsay and Sir Andw. Ramsay of Abbotshall.	16 13 4	1	3	16 13 4	Do.
V.	1695	King William III.	50 0 0	2	2	25 0 0 About	Lords of the Treasury
VI.	1867	Miss Mary Ettles of Inverness.	110 9 3	3	3	35 0 0	Senatus.
VII.	1873	Grierson of Ogscastle's Trustees.	80 0 0	3	1	26 13 4	Senatus.
VIII.	1878	Mrs Isabella Webster.	150 0 0	2 1	3 3	55 0 0 37 10 0	Senatus.
IX.	1878	Dr Andrew Thomson	100 0 0	4	4	25 0 0	Trus. of Dr Thomson.
X.	1879	Mrs Barbara Mylne.	30 0 0	1	3	30 0 0	Moderator, Procurator, and Principal Clerk of General Assembly.
XI.	1882	William Renton.	19 17 8	1	3	19 17 8 About	Profs. of Theology.
XII.	1884	Robert Hunter.	33 15 0	2	2	16 17 6	Principal and Profs.
XIII.	1889	James Simson, Edinburgh.	125 0 0	5	3	25 0 0	Presbytery of Edinburgh.

I. By Ordinance, No. 79, of the Scottish Universities' Commissioners, and subsequent Order of her Majesty in Council 1868, each of the Buchanan Bursaries is open for competition to all Masters of Arts of any of the Universities of Scotland, or to Students who have passed the necessary Examinations for the Degree of M.A., but have deferred their Graduation with a view to Honours, entering on their first or second Session in the Faculty of Divinity in the University of Edinburgh. No person is admissible to competition who has for more than one Session been a Student in the Faculty of Divinity in any of the Scottish Universities. Each Bursar holds his Bursary for three years, subject to this condition, that he shall, during that period, give regular attendance, as a Student of Theology, in the University. If it appears to the Senatus Academicus desirable, for the purpose of distributing the benefits of competitive Bursaries in Theology among Students of different years, it is lawful, for that purpose only, to appoint

a Student for a shorter period. No person can hold the Bursary along with any other Bursary, Fellowship, or Scholarship in any Scottish University. *Bursars*—1889, *J. R. Macdonald, M.A.; John Muir, M.A.*, for two years.

II. By Ordinance, No. 80, of the Universities' Commissioners, and subsequent Order in Council, the regulations for this Bursary are the same as those for the Buchanan Bursaries. *Bursar*—1887, *Francis D. Brown, M.A.*

III. By Ordinance, No. 85, of the Univ. Com., and subsequent Order in Council, the regulations for this Bursary are the same as those for the Buchanan Bursaries. *Bursar*—1889, *M. B. M'Innes, M.A.*

IV. By Ordinance, No. 81, of the Univ. Com., and subsequent Order in Council, the regulations for this Bursary are the same as those for the Buchanan Bursaries. *Bursar*—1888, *James M. Kirkpatrick, M.A.*

V. By Ordinance, No. 76, of the Universities' Commissioners, and subsequent Order in Council, each King William Bursary is open to competition to all Masters of Arts of any of the Universities of Scotland, or Students who have passed the necessary examinations for the Degree of M.A., and who have attended for one Session, and no more, in the Faculty of Divinity in the University of Edinburgh: Provided that no person shall be a competitor who has attended for one or more Sessions in the Faculty of Divinity in any other of the Scottish Universities. The examinations in the competition shall be conducted by the Professors in the Faculty of Divinity in the University. Each Bursar shall hold his Bursary for two years, subject to the condition that he shall, during that period, give regular attendance as a Student of Theology in the University. No person shall hold either of the Bursaries along with any other Bursary, Fellowship, or Scholarship of any Scottish University. When the two Bursaries fall vacant at one time, one Bursar shall be appointed for two years, and the other for one year. *Bursars*—1889, *Alexander Waters, M.A.* 1890, *J. J. Trotter, M.A.*

VI. Founded in memory of her brother, J. Ettles, Esq., of Havannah. Open to those who have passed all the examinations for M.A., and are in the first year of their theological course. Cannot be held with any other Bursaries or Scholarships. *See* Deed of Foundation in CALENDAR for 1867-68. *Bursars*—1888, *James N. Cuddie, M.A.* 1889. *W. A. Knowles, M.A.; J. J. Trotter, M.A.*, for one year, resigned.

VII. As in the case of the Faculty of Arts (see No. LIII.), a student from the parishes of Crawford or Leadhills, is, if found duly qualified in respect of attainments, appointed to a Bursary in his first year, and holds it (unless he has failed to show himself a diligent student) to the end of his Theological curriculum. Failing any student from those favoured parishes, the Bursary or Bursaries will be thrown open to competition, but the winner only holds his Bursary for one year in each case. In the second and third years a student from Crawford or Leadhills has again a preference, but holds the Bursary for one year only. *See* p. 372 of CALENDAR, 1877-8. *Bursars*, 1889—First year, *John Craig, M.A.*; second year, *Robert Gray, M.A.*; third year, *J. C. Peat, M.A.*

VIII. Founded by Mrs Isabella Webster, 38 Heriot Row, Edinburgh, in memory of her husband, George Webster, Esq. There are three Bursaries,—two of £56, 5s. each, and one of £37, 10s., open to Students of Divinity in connection with the Church of Scotland in their first year, who have successfully

passed all their Examinations for the degree of M.A. in any Scottish university, whether they have actually graduated or not. Each is tenable for three years. *See* Deed of Foundation in CALENDAR for 1878-9, p. 377. *Bursars*—1887, *James J. Galloway, M.A.;* 1889, *D. A. Rollo, M.A.; S. J. Ramsay Sibbald, M.A.*, for two years.

IX. For the *Thomson Bursaries* application may be made to Messrs Traquair, Dickson, & Maclaren, 11 Hill Street. Candidates of the name of Thomson or Traquair, or natives of the town or county of Dumfries, or of the city of Edinburgh, preferred. The subjects of Examination are Latin and Classical Greek, Mathematics and Natural Philosophy, Mental Philosophy (including Logic) and Moral Philosophy and Elementary Hebrew, Apologetics, and Greek Testament. *See* p. 374 of CALENDAR for 1880-81. *Bursars*—1887, *David J. M. Porteous, M.A.* 1888, *James Thomson, M.A.* 1889, *William Serle, M.A.*

X. *Mylne Bursary.*—Founded by Mrs Barbara Macaulay or Mylne, in memory of her husband, the Rev. Andrew Mylne, minister of the parish of Dollar. The Bursary (being the free proceeds of £750) which is for behoof of Students for the ministry of the Church of Scotland, of Scottish birth, tenable during the curriculum in Divinity, is awarded at the end of the session, after examination (of first year's students) on the subjects taught in the Theological Classes during the session. No one may become a Candidate who has not given his whole time to study during the session preceding the date of Examination, nor may the holder engage in paid work during any session in which he holds the Bursary. It cannot be held along with any other Bursary, Scholarship, or Endowment. *See* Deed of Foundation at page 377 of CALENDAR for 1880-1. 1889, *Andrew Watt, M.A.*

XI. Founded by the late William Renton, of 20 Royal Terrace, Edinburgh. The Faculty of Theology are the Patrons and Trustees. The Bursary may be held for three years, if the Bursar continues so long to prosecute his studies in Theology at the University of Edinburgh, with a view to the ministry in the Church of Scotland, and if not, then for the whole period he continues at the same. The student presented must have attained the age of sixteen, and not exceed the age of twenty-one years, and must be appointed after an examination in the month of November on such subjects as the Professors of the Faculty of Theology consider proper. 1887, *Robert James Thompson, M.A.*

XII. Founded by the late Robert Hunter, Dalhousie, Chesters; the Principal and Professors being Patrons. These Bursaries are for the benefit of Students of the Church of Scotland, and are awarded at close of first Session in Divinity, and are tenable for two years. Bursars must attend two Sessions in Chemistry and Geology, taking at least one of these Classes each Session. Students of the name of Hunter and Hamilton from the parishes of Temple or Cockpen have a preference, but preferential Candidates must attain to a fixed percentage. Bursars must produce certificates of diligence in the Classes of Chemistry and Geology. See excerpt from Deed of Foundation, page 437 of CALENDAR for 1885-86. 1889, *Alexander Menzies, M.A.* 1890, *John Gray.*

XIII. These Bursaries are open to Students who are entering on their first Session in Divinity, and are tenable for three years. For further details apply to the Rev. Dr Langwill, Currie, or to the Rev. John Patrick, Greenside, Edinburgh.

C.—PRESENTATION BURSARIES, Open only to Graduates or Students who have passed the necessary Examinations for the Degree of M.A., but have deferred their Graduation with a view to Honours.

No. of Foundation.	Year of Found.	Name of Founder.	Total Annual Income.	No. of Bursars.	For Years.	Annual Allowance to each Bursar.	Patrons.
I.	1695	Robert Bayne of Pitcairley.	£25 0 0	1	3	£25 0 0	Society of Sons of the Clergy.
II.	1695	James Nairne.	16 13 4	1	3	16 13 4	Prof. of Divinity.

I. This formerly belonged to Ferguson of Raith, and was sold by him to the late Principal Lee; and by Principal Lee's representatives to Professor Crawford; and by Professor Crawford's representatives to the Society for the Sons of the Clergy. By Ordinance, No. 71, of the Universities' Commissioners, and subsequent Order in Council, the following are the regulations as to this Bursary:—Each Bursar shall hold the Bursary for three years, subject to the condition that he shall, during that period, give regular attendance as a Student in Theology in the University of Edinburgh. No person shall hold the Bursary along with any other Bursary, or with any Scholarship in the University. *Bursar*—1889, *J. D. M'Gill, M.A.*

II. This Bursary is tenable for three years, or for such period as the Bursar shall give regular attendance as a Student of Theology in the University of Edinburgh. *See* Ordinance, No. 67, of the Universities' Commissioners, and subsequent Order in Council. *Bursar*—1889, *William Borland, M.A.*

D.—BURSARIES gained in Faculty of Arts, the holders of which are at liberty to study in the Faculty of Divinity.

No. of Foundation.	Year of Found.	Name of Founder.	Total Annual Income.	No. of Bursars.	For Years.	Annual Allowance to each Bursar.	Patrons.
I.	1871	The Sibbald Trustees.	About 150 0 0	5	4	About 30 0 0	The Trustees of Dr J. R. Sibbald.

I. *See* under Bursaries in Arts, No. LII. Sibbald Bursaries (pp. 198 and 204).

II.—PRIZES.

I.—BARTY MEMORIAL PRIZE.

The Barty Memorial Prize of £20 for scholarship in Hebrew and Hellenistic Greek is open to entrants to the Divinity Halls of the four Scottish Universities.

1888-89. *S. J. Ramsay Sibbald, Edin.*

II.—HEPBURN PRIZE.

The Hepburn Prize of £25, open to all Students in actual attendance at the Divinity Hall, may be awarded annually for an essay on a prescribed subject.

1889. *Robert James Thompson.*

III.-X.—THE GUNNING VICTORIA JUBILEE PRIZES.

With a view to promote the study of Natural Science among candidates for the ministry, and to bring out among ministers the fruits of study in Science, Philosophy, Language, Antiquity, and Sociology, Dr R. H. Gunning, of Edinburgh and Rio de Janeiro, has founded ten prizes in the Faculty of Divinity of the University of Edinburgh, to be known as "The Gunning Victoria Jubilee Prizes."

These prizes are ten in number, and comprise a series of five prizes of £50, £40, £30, £20, and £10, for excellence in Theological subjects, and a series of five prizes of similar values for excellence in Natural Science subjects. In their order the prizes in each series correspond in value. The successful competitors may each take both the prize in the Theological, and the prize in the Natural Science series to which their marks may respectively entitle them.

A minimum standard of proficiency shall be required in each series, and no competitor shall be awarded a prize who has not attained to this standard in both series. The prizes are competed for triennially at the close of the Divinity Session, and are open to all Students of the Church of Scotland, or other Scottish Churches holding the Confession of Faith, who are graduates of this University, or have attended two classes in the Faculty of Divinity in this University, and who have completed their Theological curriculum within two years of the close of the session when the competition takes place.

The examination in the Natural Science series will be on Natural History, Botany, and Geology, and of the same standard as the First B.Sc. Examination in Natural Science. The examination in the Theological series will be in Theology proper, the Language and Literature of the Old Testament, Ecclesiastical History, and Biblical Criticism.

The Examiners shall be the Professors of the subjects of examination in the University of Edinburgh; with the addition of a member of the Senatus of the New College, to be appointed by the Faculty of Divinity.

The first examination under this scheme will be held at the close of Session 1892-93. See Revised Scheme, p. 519 of CALENDAR 1889-90.

III.—SCHOLARSHIPS.[1]

I.—PITT CLUB DIVINITY SCHOLARSHIP.

This Scholarship was instituted in 1862 by the Pitt Club, is of the annual value of about £108, 2s. 8d., and is tenable for three years. By Ordinance No. 77, of the Universities' Commissioners, this Scholarship is open to competition to all Masters of Arts of any of the Universities of Scotland who have given regular attendance in the Faculty of Divinity in the University of Edinburgh for three complete Sessions, and who are in the course of studying, with the view of becoming Clergymen of the Church of Scotland. No person is admissible who has been entered as a Student of Divinity more than six years prior to the time of the competition.

Candidates are examined on (1) The Evidences of Revealed Religion; (2) Systematic Theology; (3) Hebrew; (4) Church History; (5) Biblical Criticism. It cannot be held with any other Scholarship, Fellowship, or Bursary of any Scottish University, or along with any parochial or pastoral charge, whether as minister or assistant.

1887. George Galloway, B.D. | 1890. *Alex. S. Martin, M.A.*

II.—MAXTON DIVINITY SCHOLARSHIP.

This Scholarship was founded by the Trustees of the late John Maxton, Esq., in 1867, is of the annual value of £42, 8s., and is tenable for three years. It is open only to Students who are members of the Established Church of Scotland, and who have completed the course of study in the Faculty of Divinity in the University of Edinburgh. (*See* Deed of Foundation, at p. 234 of CALENDAR for 1867-8.)

1887. Henry Ranken, B.D. | 1890. *John James Galloway, M.A.*

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[1] The names of Scholars are retained in the Calendar for five years.

It has been agreed by the Senatus and the Faculty of Divinity, in regard to the Fellowships and Scholarships of the funds of which they are severally the administrators, that

1. The *Pitt Theological Scholarship* (£108, 2s. 8d.) shall be competed for when it falls vacant.
2. The *Aitken Theological Scholarship* (£103, 14s. 2d.) shall be reserved from competition when it falls vacant in the same year with the Pitt.
3. The *Glover Divinity Scholarship* (£34, 8s.) shall (according to its conditions) not be open to competition when the Pitt or Maxton may be open, and shall be similarly reserved when the Aitken is open.
4. That meanwhile the *Maxton* (£42, 8s.) be competed for when it is vacant.

III.—THE GLOVER DIVINITY SCHOLARSHIP.

This Scholarship was founded in 1875 by Subscribers to a Fund for commemorating the memory of the Rev. W. Glover, D.D., and by the University Endowment Association. It is of the annual value of about £34, 8s., tenable for three years, and open to all Masters of Arts of any of the Universities of Scotland who have finished their study of Theology, before entering the Church of Scotland, within six years, and who have attended the last Session of their course at least in the University of Edinburgh. It cannot be held with any other Divinity Scholarship or Bursary in any Scottish University, and it is not offered for competition in any year where there is a vacancy in the Pitt Divinity Scholarship or the Maxton Divinity Scholarship. *See* Deed of Foundation, at p. 343 of CALENDAR for 1875-76.

IV.—THE AITKEN THEOLOGICAL SCHOLARSHIP.

This Scholarship, founded in 1875 by bequest of the Rev. David Aitken, D.D., formerly minister of Minto, is of the annual value of about £97. Its purpose is to make provision for the study of Church History and Biblical Criticism at one or more University Seats in Germany, or elsewhere on the Continent of Europe, in the case of meritorious students at Edinburgh University. It is to be awarded, after competitive examination, to a Student in Divinity of the University of Edinburgh, who is a Graduate in Arts of that University of not more than four years' standing. It is tenable for two years; but the Senatus may extend the term for another year if it appear to them desirable. The time of the competition to be fixed and publicly intimated by the Senatus at least three months before; and the Senatus are also at liberty to prescribe whether one Semester or two Semesters in the foreign University shall be attended in each year. It is not offered for competition in the same year as the Pitt Divinity Scholarship or the Glover Divinity Scholarship. *See* Deed of Foundation at p. 344 of CALENDAR for 1876-77.

1888. Alexander Still, M.A., who resigned it for the "David Kidd" Scholarship.	1889. *John C. Matthews, M.A., B.D.*

V.—THE DAVID KIDD DIVINITY SCHOLARSHIP.

This Scholarship, which is of the annual value of about £34, is tenable for three years, and is awarded, after competitive examination in Theology (same as for B.D.), to students of any of the Universities of Scotland who are natives of Scotland, and who have finished their course of study with the view of becoming Ministers of the Church of Scotland. *See* Deed of Foundation in CALENDAR for 1879-80, p. 354.

1888. *Alexander Still, M.A.*

VI.—GUNNING SCHOLARSHIPS IN NATURAL SCIENCE AND IN NATURAL THEOLOGY OR CHRISTIAN APOLOGETICS.

(*Discontinued since* 1889.)

1885. (1) John Stenhouse, M.A.; (2) W. A. Reid; (3) Alexander Whyte, M.A., B.Sc.

1887. (1) D. Simpson Brown, M.A.; (2) John D. MacGilp; (3) J. F. Miller, M.A.

1889. (1) *J. D. Gilchrist, M.A.;* (2) *W. L. Wilson, M.A.;* (3) Not awarded.

VIII.—VANS DUNLOP SCHOLARSHIP IN HEBREW AND ORIENTAL (SEMITIC) LANGUAGES.

The Competition is open to all Matriculated Students (*a*) who have regularly attended Classes in the University for not less than two and not more than seven years, (*b*) who have attended at least two courses under the Professor of Hebrew and Oriental Languages, and (*c*) who have not discontinued attendance at the University for more than one year.

Candidates will be examined in Hebrew, Syriac, and Arabic.

The Examiners are the Professor of Hebrew and Oriental Languages, and an Examiner to be appointed by the Senatus.

The conditions of tenure are the same as those applicable to the Vans Dunlop Scholarships in Arts. The next competition will take place in 1893.

1887. John Mair, M.A., in Hebrew, Syriac, and Arabic.

1890. { *James Thomson, M.A.*, / *Charles H. Titterton, M.A.* } equal.

IX.—VANS DUNLOP SCHOLARSHIP IN HISTORY.

The competition is open to all Matriculated Students of not less than two, and not more than six, years' standing, who have attended one or more courses of Lectures either by the Professor of History or by the Professor of Ecclesiastical History, and who have not discontinued attendance at the University for more than one year immediately preceding the period of competition. The Examiners are the Professor of History, the Professor of Ecclesiastical History, and either the Professor of Humanity or the Professor of Greek. The next Examination will be held in October 1892.

X.—BRUCE OF GRANGEHILL AND FALKLAND SCHOLARSHIPS.

These Scholarships were founded in 1865 by Mrs Tyndall Bruce of Falkland, and are of the annual value of £100. They come into operation only when a vacancy occurs in any one of the three Scholarships of this name in the Faculty of Arts, by the death, resignation, or

dismissal, of a Scholar during the period of his tenure of the Scholarship; and are tenable in this Faculty during the remainder of that period. They cannot be held with any other Scholarship or Fellowship of a Scottish University, or with any situation yielding an income of £100 a year. The subjects of Examination are prescribed from time to time by the Faculty.

1887. J. More Middleton, M.A. | 1888. *Alexander S. Martin, M.A.*

XI. and XII.—THE JEFFREY SCHOLARSHIPS.

These Scholarships, two in number, were founded in 1887 by Miss Jane Jeffrey of Victoria Terrace, Portobello. They are each of the annual value of about £77, and are tenable for one year. They are awarded annually for special proficiency in the subjects embraced in each of the four departments of Divinity, Hebrew and Oriental Languages, Ecclesiastical History, and Biblical Criticism; and are open to Students of Divinity in connection with the Church of Scotland who shall have given regular attendance for at least one Session on the Divinity Classes in this University, including the class with which the Scholarship competed for is specially connected. They are competed for in the following order:—first year, Divinity, and Hebrew and Oriental Languages; second year, Ecclesiastical History and Biblical Criticism; and so on from year to year. The Examination at the close of Session 1890-91 is in Divinity and in Hebrew and Oriental Languages. *See* Deed at page 497 of CALENDAR for 1888-89.

1889. *Divinity*—William C. Allan, M.A.
Prox. accessit, William Roger, M.A.
Hebrew and Oriental Languages—John William Murray.
1890. *Ecclesiastical History*—Peter Macgregor, M.A.
Biblical Criticism—Samuel Dunlop, B.A.

XIII.—COBB SCHOLARSHIP.

This Scholarship, founded in 1889, is a bequest by the late Miss Matilda Johnston Cobb, Broughty Ferry. It is of the annual value of about £30, and is tenable for three years. The subjects of Examination are Hebrew, Greek, Latin, and Mathematics, and the Scholarship is open to competition amongst Students who are entering on the study of Divinity with a view to becoming Ministers of the Church of Scotland.

IV.—FELLOWSHIP.

THE GUNNING FELLOWSHIP IN NATURAL SCIENCE AND IN THEOLOGY.

(*Discontinued since* 1889.)

1887. A. D. Sloan, M.A., B.Sc. | 1889. *George D. Hutton, M.A., B.Sc.*

V.—THE GUNNING VICTORIA JUBILEE LECTURESHIP.

With a view to promote the study of Natural Science among candidates for the ministry, and to bring out among ministers the fruits of study in Science, Philosophy, Language, Antiquity, and Sociology, Dr R. H. Gunning, of Edinburgh and Rio de Janeiro, has founded a Lectureship in the Faculty of Divinity of the University of Edinburgh, to be known as "The Gunning Victoria Jubilee Lectureship."

The Gunning Lectureship is a triennial appointment of the value of £100, and the appointment shall be made by the Faculty of Divinity. The Lecturer may be any Scottish Presbyterian clergyman at home, or in the Mission field, eminent in Science, Philosophy, Language, Antiquity, or Sociology, and the Lectures may be delivered in the University of Edinburgh, or such other place as the Faculty may appoint.

The first appointment will be made at the close of Session 1892-93. See Revised Scheme, p. 519 of CALENDAR 1889-90.

VI.—WILLIAM DICKSON TRAVELLING FUND.

This Fund is for the purpose of assisting Graduates of any Faculty, of not more than three years' standing, to travel for the purposes of Study or Research. For particulars, see page 228.

Scholarships, Bursaries, and University Prizes,

OPEN FOR COMPETITION IN THE FACULTY OF DIVINITY DURING THE ACADEMIC YEAR COMMENCING 1ST OCTOBER 1890.[1]

I. PRESENTATION BURSARIES.

1. *The M'Lurg Bursary*, of the annual value of £8, 6s. 8d., tenable for four years. *Patron*—The Dean of Guild of Edinburgh, and Wm. Brown, Esq., Surgeon, alternately.

2. *The Blair*, No. V., of the annual value of about £14, 8s., tenable for four years. *Patrons*—Governors of George Heriot's Trust, Principal of the University, minister of the High Church, and minister of New Greyfriars' Church.

3. *The Blair*, No. VI., of the annual value of about £23, tenable for four years. *Patrons*—The Principal and Professors of Divinity, Hebrew, and Ecclesiastical History.

II. COMPETITION BURSARIES.

The Bursary Examination at the beginning of Session 1890-91, will be held on Friday, 14th, and Saturday, 15th November, commencing at 10 A.M. each day, when the following Bursaries will be open for competition:—

[1] *Note.*—None of the undernoted Bursaries or Scholarships can be held along with any other Bursary, Fellowship, or Scholarship in any Scottish University. Neither the Barty nor the Hepburn Prize is subject to this condition.

1. *One Webster Bursary*, of the annual value of about £55, and tenable for three years. Open to Students of Divinity in connection with the Church of Scotland, in their first year, who have passed all their Examinations for the degree of M.A. in any Scottish University. The holders are not allowed to engage in teaching, or in any other employment without permission of the Faculty.

2. *One Ettles Bursary*, of the annual value of about £35, open to those who have passed all their examinations for M.A., and are in the first year of their course in Divinity. Tenable for three years.

3. *One Struthers Bursary*, of the annual value of £13, 17s. 9d., tenable for three years. Open to all Masters of Arts of any Scottish University, or to Students who have passed the necessary examinations for the degree of M.A., but have deferred their graduation with a view to honours, entering on their first or second session in the Faculty of Divinity in the University of Edinburgh. None can compete who has for more than one session been a Student of Divinity in any Scottish University.

4. *One Thomson Bursary*, annual value £25, tenable for four years, will also be awarded. (For revised Scheme of Allocation, see CALENDAR for 1880-81.) Students of the name of Thomson or Traquair, or who are natives of the town or county of Dumfries or of the city of Edinburgh, have a preference. If no Candidate with a preferential claim appear, or if none such attain to the required standard in the Examination, the Bursary shall be awarded to the best non-preferential Candidate. The Candidates must be matriculated Students (not necessarily Graduates) entering on their *first* Session in Divinity, and are required to intimate their intention to compete to the Agents for the Trustees, Messrs Traquair, Dickson, & Maclaren, W.S., 11 Hill Street, Edinburgh, by 1st November 1890.

5. *The Renton*, of the annual value of £19, 17s. 8d. or thereby, tenable for three years. Presentee must be between sixteen and twenty-one years of age, and in first year of Theological Course.

6. *The Cobb Scholarship*, of the annual value of about £30, and tenable for three years, may be open. The subjects of Examination are Hebrew, Greek, Latin, and Mathematics, and the Scholarship is open to competition among Students who are entering on the study of Divinity with a view to becoming Ministers of the Church of Scotland.

The subjects of examination for the above, and for *any other ordinary competition Bursay for first year's Students that may be vacant* at the opening of the Session will be—

(1.) *Latin*—Livy, Books XXI., XXII., and translation from English into Latin prose.

(2.) *Greek*—Homer's "Iliad," Book VI., and Demosthenes' "Philippic," III.

(3.) *Mathematics*—"Euclid," Books I.-VI.; Algebra and Elementary Trigonometry.

(4.) *Metaphysics*—Ferrier's "Lectures on Greek Philosophy."

(5.) *Moral Philosophy*—Sidgwick's "History of Ethics."
(6.) *Natural Philosophy*—Blaikie's "Elements of Dynamics," and Balfour Stewart's "Elementary Physics."
(7.) *Hebrew*—Elements of Grammar.
(8.) *Apologetics*—Flint's "Antitheistic Theories."
(9.) *Greek Testament*—St Matthew, and Epistle to 1 Corinthians as in Ellicott.

7. *Grierson Bursaries.*—There are three of those Bursaries (each of annual value of £26, 13s. 4d.), to be competed for, one by first, one by second, and one by third year's Students in Divinity. A Student from the parish of Crawford or the parish of Leadhills is, if he has been a good Student in Arts, and is in need of pecuniary aid, appointed to a Bursary in his first year in Divinity, and holds it (unless he has failed to shew himself a diligent student) to the end of his curriculum. If there be two or more such applicants in any year, they are to be examined. Failing any Student from one of those favoured parishes, the Bursary or Bursaries will be thrown open to competition, but the winner only holds his Bursary for one year. In the second year a student from Crawford or Leadhills has again a preference, but holds the Bursary for one year only. See full particulars in CALENDAR (1877-8). Preferential candidates to lodge their applications with the *Clerk of Senatus* on or before 1st November 1890.

The subjects of examination for the Grierson Bursaries, if there be competition, will be :—

For the *first* year—

Same as for ordinary Competition Bursaries, except that *Hebrew*, *Apologetics*, and *Greek Testament* are omitted.

For the *second* year—

(1.) *Latin*—Lucretius, Book V., and Livy, Book II.
(2.) *Greek Testament*—Gospel of St Matthew, and Epistles of St Peter.
(3.) *Hebrew*—Grammar; 2 Kings, chapters xiv. to end of Book; Psalms i.-viii. inclusive.
(4.) *Divinity*—The Trinity; Doctrine of Sin.
(5.) *Ecclesiastical History*—To 325 A.D.
(6.) *Biblical Criticism*—Charteris' "Christian Scriptures."

For the *third* year—

(1.) *Apologetic Theology*—Butler's "Analogy."
(2.) *Hebrew*—2 Kings, Ecclesiastes, Psalms i.-viii. inclusive.
(3.) *Ecclesiastical History*—To 325 A.D., and of Scotland, 1500 A.D. to 1600 A.D.
(4.) *Biblical Criticism*—"Canonicity," pp. 1-41.

8. *Two Simson Bursaries*, each of the annual value of £25 and tenable for three years, are open to students who are entering on their first session in Divinity. For further details, apply to the Rev. Dr Langwill, Currie, or to the Rev. John Patrick, Greenside, Edinburgh.

9. *A Hepburn Prize*, £25 (which may be divided), for the best Essay on "The Doctrine of the Eternal Priesthood of Christ as presented in the Epistle to the Hebrews."

The Essay not to exceed fifty pages 4to, and to be handed to Rev. Dr Scott, 16 Rothesay Place, Edinburgh, on or before 1st December 1890.

10. *Barty Memorial Prize* of about £25 for Scholarship in Hebrew and Hellenistic Greek, is open to entrants to the Divinity Halls of the four Scottish Universities. Competitors to apply to J. W. Barty, Esq., Dunblane.

At the close of Session 1890-91, the following will be open for competition :—

1. *The Aitken Scholarship* of about £97, tenable for two years, but tenure may be extended by the Senatus to three years. Holder must study Ecclesiastical History and Biblical Criticism at a Continental University. Open to a Student of Divinity of the University of Edinburgh who is a Graduate of Arts of that University, of not more than four years' standing. Examination as in B.D.

2. *The David Kidd Scholarship.* Annual value about £34. Open to Students of Scottish Universities, natives of Scotland, who have finished their course of study with a view of becoming ministers of the Church of Scotland.

3. *One of the King William Bursaries* of £25, tenable for two years, open to Students who have finished the first session of their Theological course, and have passed all the examinations for the degree of M.A. The subjects of examination for this Scholarship will be the work of the Session in the Classes of Divinity, Ecclesiastical History, Biblical Criticism, and Junior Hebrew.

4. *A Robert Hunter Bursary*, annual value about £16, 17s. 6d., awarded at close of first Session in Divinity, and tenable for two years. Bursars must attend two Sessions in Chemistry and Geology, taking at least one of these classes each Session. Students of the name of Hunter and Hamilton, from the parishes of Temple and Cockpen, have a preference, but preferential Candidates must attain to a fixed percentage. Bursars must produce certificates from the Professors of Chemistry and Geology. Examination as for "King William." These Bursaries cannot be held along with any other Bursary, Scholarship, or Fellowship in any Scottish University.

5. *Two Jeffrey Scholarships*, each of about the annual value of £77, tenable for one year; one for special excellence in Divinity, and one for special excellence in Hebrew and Oriental Languages. They are open to Students preparing for the Ministry of the Church of Scotland who have attended for *at least* one Session the classes in the Faculty of Divinity in this University, including the class with which the Scholarship competed for is specially connected. Successful Candidates must attain to a fixed percentage of marks.

The subjects of Examination for the Scholarship in Divinity are :—

(1.) History of Unbelief in Nineteenth Century. 3 hours.
(2.) The Doctrine of the Atonement. 2 hours.
(3.) Essay on some subject in Christian Apologetics. 1 hour.

For the Scholarship in Hebrew and Oriental Languages—

(1.) *Hebrew*—Subjects prescribed for B.D.
(2.) *Arabic*—Socin's Arabic Grammar with Chrestomathy A ; Arabic Version of Jonah ; Translation into Arabic.

UNIVERSITY PRIZES.

1. *The Lord Rector's Prize*, of twenty-five guineas, for the best Essay on "The effect on the History of Scotland, and on the character and Institutions of the Scottish nation, produced by other Countries, prior to the date of the Union with England."

The Prize is open to Students of the University, and to Graduates of not more than two years' standing. Essays to be lodged with the Principal before 1st November, each bearing a motto, and containing the name, address, and University standing of the Candidate.

2. *The Trustees of Gray's Prize Essay Fund* offer three Prizes, one of £20 for the first, one of £10 for the second, and one of £5 for the third best Essay on "The British Constitution compared with Modern Republics."

3. A Prize of Twenty Guineas, offered by the University Club of London, open to all Graduates of this University of not more than two years' standing, for the best Essay on "The Progress of Biblical Archæology during the last Thirty Years." Essays to be lodged with the Dean of the Faculty of Divinity on or before 31st December 1890, each bearing a motto, and accompanied by a sealed envelope containing the name, address, and University standing of the Candidate.

William Dickson Travelling Fund, for the purpose of assisting Graduates of any Faculty of not more than three years' standing, to travel for the purpose of Study or Research. Applications must be lodged with the Secretary of Senatus on or before 15th March annually. See page 228.

M. C. TAYLOR,
Dean of the Faculty of Divinity.

III.

FACULTY OF LAW.

1890-91.

Dean.

PROFESSOR KIRKPATRICK, LL.D.

5 *Murrayfield.*

Programme of Classes.

FACULTY OF LAW.

Dean—Professor KIRKPATRICK, LL.B., LL.D.

SUMMER SESSION, 1890.

The Classes in the Faculty of Law will open as follows, and will close on Friday, 18th July.

Classes.	Days of Opening, and Hours of Lectures.	Professors.	Class Fees.
Civil Law	13 May, 9 o'clock	Prof. Goudy.....	£5 5[1]
Constitutional Law and History.....	13 May, 3 ,,	Prof. Kirkpatrick.	3 3
Scots Law.....	13 May, 4 ,,	Prof. Rankine.....	5 5[1]
Med. Jurisprudence...	1 May, 11 ,,	Prof. Sir D. Maclagan.....	4 4

WINTER SESSION, 1890-91.

The Classes in the Faculty of Law will open on Wednesday, 15th October, and will close on Friday, 20th March 1891.

Classes.	Days of Opening and Hours of Lectures.	Professors.	Class Fees.
Public Law...	3 Nov., 3 o'cl.	Prof. Sir Ludovic Grant, Bart..	£3 3
Civil Law	15 Oct., 4 ,,	Prof. Goudy.....	5 5[1]
Scots Law...	15 Oct., 9 ,,	Prof. Rankine.....	5 5[1]
Conveyancing.....	15 Oct., 9 ,,	Prof. Fraser-Tytler	4 4
Political Economy & Mercantile Law ...	30 Oct., 5 ,,	Prof. Nicholson...	3 3
Constitutional Law ...	(*In Summer Sess.*)		
Hist. and Constit. of U.S.A.	15 Oct., 3 o'cl.; (*Mon., Wed., & Fri.*; 20 *Lects.*)	Professor Kirkpatrick	1 1[2]
Med. Jurisprudence...	(*In Summer Sess.*)	Prof. Sir D. Maclagan	4 4
Civil and Crim. Procedure (*Mondays*).	20 Oct., 5 o'cl. 20 *Lectures.*	Lecturer— John P. Coldstream, W.S. ...	1 1[2]

[1] This Fee is paid in Winter, and is for the Winter and Summer Sessions. Second Year's Course, £3, 3s.

[2] Five Shillings University Entrance Fee for Non-matriculated Students.

Order of Study.

Extract from Minutes of a Meeting of the Faculty, 20th February 1863.

The Faculty having taken into consideration that the Course of Study in Law for the Degree of LL.B. extends over three Academical years, and that the natural order in which the various branches of the Course ought to be taken up is often departed from and sometimes altogether inverted—recommend Students, whether intending to graduate in Law or not, to attend the Lectures in the following order, viz. :—

First year—Civil Law ;
Second year—Scots Law ;
Third year—Conveyancing ;

and to attend the Lectures on Public Law, Constitutional Law and Legal History, and Medical Jurisprudence, during the Second and Third years of study, in such order as may be most convenient.

Professorial Courses of Lectures.

I. CIVIL LAW.

PROFESSOR GOUDY.

The Course of Lectures on Civil Law extends over a Winter and Summer Term, covered by one entrance-fee of £5, 5s. The Winter Lectures will begin on 15th October, and continue until 20th March ; the Summer Lectures will be given in May, June, and July.

The subject-matter of the Course is the External and Internal History, and the General and Special Doctrines of the Law of

Rome, as developed in the Institutes of Gaius and Justinian, supplemented from the other ante-Justinianian and Justinianian texts.

The Lectures will be equally adapted for students intending to enter the legal profession in Scotland or England, or qualifying for service in India or the Colonies.

Text-Books.—The Institutes of Gaius and Rules of Ulpian, and the Institutes of Justinian.

For preliminary reading intending students may consult Muirhead's "Historical Introduction to the Private Law of Rome," or Sheldon Amos's "History and Principles of the Civil Law of Rome."

II. SCOTS LAW.

PROFESSOR RANKINE.

Students are strongly recommended to make themselves familiar either with Erskine's "Principles" or his "Institutes" (edition by J. Badenach Nicolson, Esq., 1871). It is hoped that a new edition of the former work may be ready before the beginning of the session, as the text-book of the Class.

1. Sketch of the Literature of the Law of Scotland—the sources of the Law—the interpretation of Statutes.

2. Personal Relations—marriage and the modes of proving it—patrimonial effects of Marriage—rights of husband and wife—dissolution of Marriage—divorce—tutors and curators—minors—insane—parent and child—succession—heritable and moveable—wills—trusts.

3. Wrongs—personal injury—defamation—ownership of heritable property—rights and liabilities incident thereto—ownership of moveables—copyright—patents.

4. Obligations and Contracts—general requisites, constitution, and construction — partnership — joint-stock companies—factory and agency—sale—commodate—pledge—letting to

hire—leases—carriers—shipping—insurance—bills of exchange—cautionary—extinction of obligations—diligence—bankruptcy.

5. Parochial Law—burgh and county law—rates and taxes.
6. Law of Evidence.
7. Criminal Law.

Summer Session.

The Lectures on Criminal Law, and part of the lectures on the above subjects, are delivered during the Summer Session.

III. CONVEYANCING.

PROFESSOR FRASER-TYTLER.

The course of Lectures delivered from the Chair of Conveyancing will embrace the following subjects :—

BRANCH FIRST—*Deeds in General.*

1. Capacity of the parties to contract, and lawfulness of the subject-matter. 2. Requisites as to external form, and the solemnities of execution and authentication. 3. Deeds privileged as regards these solemnities. 4. Delivery and acceptance. 5. Operation of error, fraud, force, and fear as grounds of reduction of Deeds. 6. Effect of *homologation* and *rei interventus* in validating Deeds imperfect or defective in themselves. 7. The Stamp Laws in their relation to conveyancing. 8. General structure of, and clauses common to all Deeds.

BRANCH SECOND—*Deeds relating to Moveable Rights.*

1. The personal bond and other personal obligations. 2. Personal contracts (exclusive of the contract of Marriage). 3. Deeds relating to corporeal moveables, including maritime writs. 4. Factories and powers of attorney.

BRANCH THIRD—*Deeds relating to Heritable Rights.*

1. Sketch of the feudal system and its bearing on the existing state of heritable rights in Scotland. 2. The writs constituting

a feudal estate, and the respective rights of superior and vassal. 3. The writs used in the voluntary transmission, *inter vivos*, of such estate, and of lands formerly held by burgage tenure. Under this head will also be considered the missive of sale and articles of roup, together with what constitutes a *prescriptive* progress of titles, and a full search of incumbrances. 4. The judicial transmission of heritage. 5. Heritable securities. 6. Leases.

BRANCH FOURTH—*Family Settlements and relative Deeds.*

1. Destinations. 2. The completion of titles by the heir or successor to heritable estate. 3. The contract of marriage and bond of provision. 4. Testamentary Deeds, applicable to either or both classes of estate. 5. The completion of titles by the executor to moveable estate. 6. Entails.

In each of these branches, the alterations made by modern legislation in the structure or effect of any of the deeds or writs treated of will be pointed out, and the old and new forms compared.

IV.—PUBLIC LAW.

PROFESSOR SIR LUDOVIC GRANT, BART.

The Course of Lectures delivered from the Chair of Public Law and the Law of Nature and Nations is divided into two branches :—

1. NATURAL LAW, the Philosophy of Law, or the principles of the science of jurisprudence as a whole.

2. INTERNATIONAL LAW, or the *jus inter gentes.*

1st, *Public International Law.*

2d, *Private International Law*, or the rules in accordance with which the municipal laws of one State are recognised within the territories of another.

The course is varied from year to year, some portions of it being treated with greater, and others with less fulness.

The Course for Session 1890-91 will begin on Monday, 3rd November. The Lectures will be delivered *five* days a-week, and will terminate simultaneously with the other Classes in the Faculty of Law.

Text-Books.—Natural Law—Lorimer's Institutes of Law, 2d Edition. Ahrens's Cours de Droit Naturel. Trendelenburg's Naturrecht auf dem Grunde der Ethik. Kant's Rechtsphilosophie (translated by W. Hastie, B.D.). Krause's Rechtsphilosophie (edited by Röder), and Röder's Naturrecht.

History.—Wheaton's History of the Law of Nations. Pardessus's Us et Coutumes de la Mer. Lindsay's History of Merchant Shipping.

Public International Law.—Lorimer's Institutes of the Law of Nations. Bluntschli's Moderne Völkerrecht (of which there is a French translation entitled Droit International Codifié). Heffter's Droit International Public. Lawrence's Commentaire sur les Éléments du Droit International. Wheaton's Elements of International Law, by Lawrence or Dana. Phillimore's International Law. Hall's International Law.

Private International Law.—Savigny's Private International Law, by Guthrie, 2d Edition. Bar's Internationales Privat-und Strafrecht, translated by Gillespie; or better, Theorie und Praxis des Internationalen Privatrechts von L. v. Bar (Zweite umgearbeitete Auflage des Internationalen Privat- und Strafrechts). Westlake's Private International Law, 2d Edition.

V. HISTORY.

PROFESSOR KIRKPATRICK.

The Lectures are given in the Summer Session, daily, except Saturdays, at 4 P.M.; and a fortnightly examination is held on Fridays. Prizes are awarded for distinction in the class-examinations, and also for two essays on subjects to be afterwards announced.

Subject—The Constitutional History and Law of England, with occasional reference to the constitutions of other countries.

Students are recommended to consult Stubbs's Select Charters and English Constitutional History; Hallam's Middle Ages, Chap. viii.; Hallam's Constitutional History of England, from the reign of Henry VII. to George II.; Sir Thomas Erskine May's Constitutional History, for the period from the accession of George III.; The Annals of England (Parker, 1876); The English Constitution by W. Bagehot; Guizot's Lectures on Representative Government; R. Gneist's Self-Government in England, 3d Edition, Berlin, 1871; Gneist's Geschichte und heutige Gestalt der Aemter und des Verwaltungsrechts in England, 2d Edition, Berlin, 1866; Gneist's History of the English Constitution, translated by P. A. Ashworth, London, 1886; and Blackstone's Commentaries, Book IV., of Public Rights.

A Course of twenty Lectures on the History and Constitution of the United States of America will begin on 15th October, at 5 P.M. (Mondays, Wednesdays, and Fridays), provided a sufficient number of Students present themselves. (Fee, One Guinea; University Entrance Fee for Non-matriculated Students, 5s.)

VI. MEDICAL JURISPRUDENCE.

PROFESSOR SIR DOUGLAS MACLAGAN.

For Synopsis of this Course, *see* under Faculty of Medicine, No. XI.

VII. COMMERCIAL AND POLITICAL ECONOMY AND MERCANTILE LAW.

PROFESSOR NICHOLSON.

The Lectures will follow the order of arrangement of John Stuart Mill's *Principles of Political Economy*.

1. METHODS USED IN ECONOMIC SCIENCE.—Analysis of Fundamental Conceptions, Wealth, Capital, &c.

2. PRODUCTION OF WEALTH.—Division of Labour—Accumulation of Capital—Growth of Population.

3. DISTRIBUTION OF WEALTH.—Socialism—Land Tenure—Wages—Profits—Rent—Trade Unions.

4. VALUE.—Money—Inflations and Depressions of Trade—Commercial Crises—Banking—Free Trade—Foreign Exchanges—Stock Exchange.

5. ECONOMIC PROGRESS.—Effects of Progress on Value, and on the relative Distribution of Wealth.

6. PRINCIPLES OF THE LIMITS OF GOVERNMENT INTERFERENCE WITH INDUSTRY.—Direct and Indirect Taxation—Incidence of Taxes—National Debts—Contracts—Joint Stock Companies—Patents—Copyrights.

Although Mill will be used as text-book, references will be constantly given to previous writers, *e.g.*, Adam Smith and Ricardo, as well as to more recent writers, *e.g.*, Giffen, Bagehot, Sidgwick, Walker, Jevons, Marshall, &c.

History.—One lecture a-week will be devoted to the Economic History of England. This course is not intended to give the history of the Theory of Political Economy, but to trace the principal facts and institutions in the material and social life of the English people from an economic standpoint, *e.g.*, Gilds, Feudal System, Land Tenures, Ecclesiastical Influence, Serfdom and the Poor, Forms and Amount of Wealth, Foreign and Internal Trade, &c.

Agriculture.—A course of about twenty lectures will be given, specially adapted for Students in Agriculture. Fee, One Guinea. (See AGRICULTURE.)

LECTURESHIP ON PROCEDURE, CIVIL AND CRIMINAL.

LECTURER—JOHN P. COLDSTREAM, W.S.

This course will embrace an enumeration of the various Courts having jurisdiction in Scotland, with the nature of their respective jurisdictions, the actions applicable to each, and the

details of the procedure in carrying on the suits, whether civil or criminal.

Text-Books.—Mackay's "Practice of the Court of Session;" Coldstream's "Procedure in the Court of Session;" Dove Wilson's "Sheriff-Court Practice in Civil Causes;" Macdonald's "Criminal Law;" Macdonald's "Criminal Procedure (Scotland) Act, 1887."

Class Prize Lists.

I.—PUBLIC LAW.

1889-90.

PRIZEMEN.—1. G. W. Wilton, B.L., Edinburgh; 2. Wm. Lobban, M.A., Aberdeen; 3. James Roberton Christie, M.A., Pollokshields; 4. John M. Davidson, M.A., Lanark, and Thomas Johnston, M.A., Kirkcaldy—equal.

HONOURS.—Alexander Brown, M.A., Edinburgh; C. W. Bruce, M.A., Edinburgh; J. A. Gordon, M.A., Edinburgh; Andrew Brown, M.A., St Andrews.

W. HASTIE, B.D., *for Professor.*

II.—CIVIL LAW.

WINTER AND SUMMER SESSIONS, 1888-89.

PRIZEMEN.—1. James Gray; 2. John Taylor Cameron, M.A. Edin.; 3. J. F. Fairweather; 4. James M'Robie, M.A., Aber.

HONOURS OF THE FIRST CLASS.—The Prizemen; 5. William Forsyth, M.A. Aber.; 6. Duncan M. Abel, M.A. Aber.; 7. William Morton.

HONOURS OF THE SECOND CLASS.—8. William Mitchelhill; 9. David Ritchie, B.A. Oxon.; 10. Alexander Thomson, M.A. Edin.; 11. John B. Young; 12. William Brown, M.A. Aber.; 13. Thomas B. Morison, M.A. Edin.

JAS. MUIRHEAD, *Professor.*

III.—SCOTS LAW.

SUMMER SESSION, 1889.

1. D. M. Cassels, Lanarkshire; 2. Andrew F. Smith, Wigtownshire; 3. Donald Michael, Nairnshire; 4. Robert Moir Williamson, Morayshire—*Prizemen*; 5. M. R. Greenlees, Lanarkshire; 6.

Alexander N. M'Dougal, Berwickshire; 7. W. J. C. Reed, Dumfriesshire; 8. D. Johnston, Lanarkshire; 9. Robert Bruce, Caithness-shire; 10. Arthur S. Orr, Morayshire; 11. B. O. M'Ritchie, Forfarshire; 12. J. Balfour Paterson, Forfarshire; 13. J. N. Mactaggart, Argyleshire; 14. C. M. Scott, Fifeshire; 15. Roderick Paterson, Ross-shire; 15 and 16. Henry Sneddon, Fifeshire, and Charles Stewart, Roxburghshire—equal; 17. E. J. Cuthbertson, Mid-Lothian; 18. David Robb, Forfarshire; 19. G. Irving Bell, Dumfriesshire; 20. A. Paterson, Perthshire; 21. William Fraser, Inverness-shire; 22. John Mackenzie, Caithness-shire.

ESSAY.—1. Robert Moir Williamson; 2. Henry W. Gibson and W. Ingram—equal.

WINTER SESSION, 1889-90.

1. James M'Robie, Banffshire; 2. Rutherford Fortune, Banffshire; 3. J. Falconer Fairweather, Forfarshire; 4. Thomas Johnston, Fife; 5. James Gray, Mid-Lothian; 6. Thomas M'Kelvie, Argyle; 7. William Brown, Aberdeenshire; 8. J. B. Young, Fife—*Prizemen*; 9. Malcolm Green, Caithness; 10. J. M. Hendry, Forfarshire; 11. John Edward, Forfarshire; 12. A. Mackenzie, Morayshire; 13. T. B. Morison, Mid-Lothian; 14. Frank Chalmers, Fife; 15. D. L. Forbes, Perthshire; 16. James Sinclair, Orkney; 17. J. S. Christie, Forfarshire; 18. G. B. Ross, Aberdeenshire; 19. James Learmonth, Linlithgowshire: 20. E. D. Jameson, Morayshire; 21. James Bee, Mid-Lothian; 22. T. T. Mudie, Perthshire; 23. Hugh Graham, Fifeshire; 24. John M'Nay, Dumfriesshire; 25. D. H. Thomson, Mid-Lothian; 26. William Forsyth, Morayshire; 27. D. G. Wilson, Kinrosshire.

JOHN RANKINE, M.A., *Professor.*

IV.—CONVEYANCING.

FIRST-CLASS HONOURS.—1. Ronald Francis Maxwell, Kirkcudbrightshire; 2. James Blacklock, Dumfriesshire; 3. Donald Michael, Nairnshire, and Arthur S. Orr, Morayshire—equal; 5. John William Bremner, Morayshire—*Prizemen*; 6. William Innes, Fifeshire; 7 Kenneth Sanderson,[1] Selkirkshire; 8. Thomas Hunter,[1] Roxburghshire.

SECOND-CLASS HONOURS.—9. John N. Mactaggart, Argyleshire; 10. Blair O. M'Ritchie, Forfarshire; 11. Robert Bruce, Caithness; 12. David Johnston, Lanarkshire, William J. C. Reed, Dumfriesshire, and James Sinclair, Orkney—equal; 15. Andrew F. Smith, Wigtown, and Henry A. Watson, Morayshire—equal; 17. Keith Ramsay Maitland, M.A., Edinburgh; 18. Alexander N. M'Dougal, Berwickshire; 19. James Hyslop, Galloway; 20. Thomas Hanton,[1]

[1] Second Year Student.

Edinburgh ; 21. Henry William Gibson, Forfarshire, and William Walls, Forfarshire—equal ; 23. Arthur C. Hunt, Forfarshire ; 24. James Archibald, Banffshire, George J. Bell, Dumfriesshire, and Walter Scott Pennell, Fifeshire—equal ; 27. John L. Officer, Mid-Lothian, Charles M. Robson,[1] Berwickshire, David Robb, Forfarshire, Thomas Trotter, Leith, and Robert Moir Williamson, Aberdeen—equal ; 32. John Thornton, Forfarshire ; 33. James Leckie Aird, Forfarshire, and John Mackenzie, Caithness—equal ; 35. Andrew Grierson, Selkirkshire ; 36. Evan J. Cuthbertson, Edinburgh ; 37. Alexander Nimmo, Stirlingshire ; 38. George A. O. Green, Caithness ; 39. John Dickson, Berwickshire ; 40. Charles Montgomery Scott, Fifeshire, and James K. Miles, Mid-Lothian—equal.

JAMES S. FRASER-TYTLER, LL.D., *Professor.*

V.—CONSTITUTIONAL LAW AND HISTORY.

Summer Session, 1889.

1. James Roberton Christie, M.A. (*First Prize*) ; 2. A. Blairford Smith, M.A., and J. Malcolm Tait—equal (*Second Prizes*) ; 4. David B. Bogle, M.A. ; 5. Duncan M. Abel, M.A. ; 6. Charles W. Bruce, M.A. ; 7. W. Allan Neilson ; 8. Archibald B. Clark, and Thomas J. Millar, M.A.—equal ; 10. E. W. Neish, B.A., and Michael Smith, M.A.—equal ; 12. James W. Forbes, M.A.

Essays.—1. J. R. Christie, M.A., and J. M. Tait—equal (*First Prizes*) ; 3. W. A. Neilson (*Second Prize*) ; 4. D. B. Bogle, M.A., and James S. Ponder—equal.

JOHN KIRKPATRICK, LL.B., *Professor.*

VI.—MEDICAL JURISPRUDENCE.

1. J. R. Christie (*Medal*) ; 2. James Barty ; 3. John B. Young ; 4. Lawrence M'Laren ; 5. John Taylor Cameron ; 6. Alex. Fraser ; 7. J. S. Hepburn ; 8. H. G. H. Sprott.

DOUGLAS MACLAGAN, Kt., M.D., *Professor.*

VII.—COMMERCIAL AND POLITICAL ECONOMY AND MERCANTILE LAW.

Winter Session, 1889-90.

Prizes and First-Class Certificate.—1. H. Barker, Edinburgh—*Class Medal and Merchant Company Prize ;* 2. D. Balfour, Orkney, and W. Mitchell, M.A., Edinburgh, equal—*George Watson's and*

[1] Second Year Student.

Daniel Stewart's Prizes; 4. W. C. Murray, B.A., Canada; 5. H. Roger, Kilmarnock; 6. T. J. Millar, M.A., Edinburgh; 7. W. B. Stevenson, Forfar; 8. E. M. Macphail, M.A., Scotland; 9. J. Ballantine, M.A. Whithorn; 10. A. Lowe, M.A., Edinburgh; 11. W. Lobban, M.A., Aberdeen; 12. W. J. Pennell, Fifeshire.

ESSAYS.—1. H. Barker and W. Mitchell—equal (*Prizes*); 3. W. C. Murray; 4. J. B. Brown.

SECOND-CLASS CERTIFICATES.—G. Crichton, W. Lamond.

J. SHIELD NICHOLSON, D.Sc., *Professor.*

VIII.—CIVIL AND CRIMINAL PROCEDURE.

PRIZEMEN AND FIRST-CLASS HONOURS.—1. James Mackintosh, Forfarshire, and Thomas Trotter, Mid-Lothian—equal; 3. Alexander Bruce, Caithness-shire.

SECOND-CLASS HONOURS.—4. Blair O. M'Ritchie, Forfarshire; 5. James M'Lauchlan, Mid-Lothian; 6. James Taylor Cameron, Mid-Lothian.

JOHN P. COLDSTREAM, W.S., *Lecturer.*

Graduation in Law.

DEGREES OF BACHELOR OF LAWS (LL.B.) AND BACHELOR OF LAW (B.L).

Two Degrees in Law are conferred upon Examination in the University of Edinburgh, viz., Bachelor of Law (B.L.) and Bachelor of Laws (LL.B.).

Either of these Degrees admits to the Profession of Law Agent, provided an Examination in the Practice of the Courts is passed to the satisfaction of the Examiners under the Law Agents Act.

The Degree of LL.B. admits to the Profession of Advocate without further examination.

Either Degree qualifies for admission to the General Council of the University.

Candidates for the Degree of LL.B. must be graduates in Arts of a Scottish, English, or Irish University, or of some other University approved of by the Senatus and the University Court.

Candidates for the Degree of B.L. need not be graduates in Arts; but, if not, they must have attended one or more Arts classes during one academical year in a British, Irish, or other recognised University, and must pass a Preliminary Examination in general knowledge according to the Regulations after stated.

Candidates with the necessary qualifications for either Degree, may present themselves for Examination in any number, not less than two, of the subjects prescribed, and they may present themselves on one or more subsequent occasions for examination in the remaining subjects; but on each occasion they must pass in two subjects at least. Two Law Graduation Examinations are held annually, the first beginning on the first Monday in July, and the second on the last Monday in October.

Candidates must enter their names and addresses at the office of the Clerk of Senatus, exhibit the necessary certificates, and pay the required fee, at least one week before the first day of the Examination.[1]

The Degree of Bachelor of Laws was instituted by an Ordinance of the Universities' Commissioners, dated 12th July 1862. The Degree of Bachelor of Law (B.L.), was instituted by the University, and approved by Her Majesty by Order in Council, dated 6th August 1874.

The rules of the Ordinance, as amended by an Order in Council of 11th August 1884, are—

I. No one shall hereafter be admitted as a candidate for the Degree of Bachelor of Laws (LL.B.) . . . unless he be a Graduate in Arts of one of the Universities of Scotland, or of England or Ireland, or a Graduate in Arts of a colonial[2] or foreign University, whose Degree may, for this purpose, have been specially recognised by the University Court.

II. The Course of Study in Law necessary for the Degree of Bachelor of Laws shall extend over three Academical years, and shall include attendance on a Distinct Course in each of the six following Departments, viz.:—

1. CIVIL LAW.....	During Courses of not less than Eighty Lectures each.
2. LAW OF SCOTLAND.....	
3. CONVEYANCING, or, in the option of the Candidate, POLITICAL ECONOMY [3]	
4. PUBLIC LAW	During Courses of not less than Forty Lectures each.
5. CONSTITUTIONAL LAW and HISTORY	
6. MEDICAL JURISPRUDENCE [4].....	

III. No one shall hereafter be admitted to Examination as a candidate for the Degree of Bachelor of Laws, until he has completed the course of study above prescribed; and no one shall be admitted as a

[1] When names are not entered, and fees paid, on or before the stated dates, a late-entry fee of ten shillings must be paid before the candidate can be admitted to examination. A candidate is not held to be entered for the examination until his name is entered, the fee paid, and all the necessary certificates, &c., lodged.

[2] The following Degrees have been recognised in terms of this Section: B.A. of New Zealand University; B.A. of Cape of Good Hope University.

[3] This option, initiated by the Faculty of Law, was approved by Her Majesty by Order in Council on 11th August 1884. Conveyancing, however, continues to be compulsory, both as to attendance and examination, for candidates who desire their LL.B. degree to qualify them for the profession of a law-agent; and it continues compulsory as to attendance for candidates for the Bar.

[4] For names of authorised extra-academical lecturers, *see* page 375.

candidate in any University unless two at least of the three Academical years of his course of study in Law shall have been in such University.

IV. Candidates for the Degree of Bachelor of Laws shall be examined, both in writing and *viva voce*, on each of the six Departments of Law above specified.

V. Each candidate must satisfy the Examiners that he possesses a competent knowledge of Law in each of the said Departments; and the Examiners shall further, in judging of the qualifications of candidates, have special regard to their acquirements in the two Departments of Public Law and Constitutional Law and History.

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IX. Each candidate for the Degree of Bachelor of Laws shall pay a Fee of Five Guineas in respect of his Examination for the Degree.[1]

The Rules of the Order in Council of 6th August 1874 sanctioning the Degree of B.L., are as follows:—

XII. No one shall be admitted to Examination as a Candidate for the Degree of Bachelor of Law in the University of Edinburgh, unless he be a Graduate in Arts, qualified as prescribed in Section I. (of the Regulations for LL.B.), or unless he shall have studied in one of the Universities therein mentioned, during at least one Academical year, one or more of the subjects included in the course of Study in the Faculty of Arts, and shall have passed a satisfactory Examination in (1.) Latin, (2.) Greek, French, or German, and (3.) any two of the following subjects—namely, Logic, Moral Philosophy, and Mathematics. The Examinations shall be conducted by Examiners in Arts, together with some of the Law Examiners.[2]

XIII. The course of study in Law necessary for the Degree of Bachelor of Law in the University of Edinburgh shall extend over at least two Academical years, and shall include attendance on a distinct course, as specified in Section II. (of the Regulations for LL.B.), in each of the first three of the Departments therein mentioned,[3] and in any one of the other three Departments; and no one shall be admitted to Examination as a Candidate for the said Degree, unless two Academical years of his course of Study in Law shall have been in the University of Edinburgh.

XIV. The Examination for the said Degree of Bachelor of Law in the University of Edinburgh shall be conducted at the same time, and in the same manner, as that for the Degree of Bachelor of Laws, and the

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[1] If the Examination is taken in two or more parts, the fee for the first is £3, 3s., and for the second, £2, 2s., no fee being payable in respect of any Examination after the second.—Every Candidate for a Degree in Law must matriculate at the University for the year in which he appears for Examination or for Graduation. He must enter his name for graduation, and if not already a member of the General Council, must also pay the fee of £1 for Registration at least two clear days before the date of graduation.

[2] Candidates must pass in these subjects at the Ordinary Examinations for the Degree of M.A. in April and October (*see* REGULATIONS FOR GRADUATION IN ARTS).

[3] Viz., Civil Law, Scots Law, and Conveyancing: the option of Political Economy not applying to the B.L. degree.

Candidates shall be examined in each of the Departments of Law on which they shall have given attendance, as above required.

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XVI. The Fee to be paid by each Candidate for the Degree of Bachelor of Law in the University of Edinburgh shall be the same as is provided by Section IX., with reference to Examinations for the Degree of Bachelor of Laws.[1]

SUBJECTS OF EXAMINATION.

Preliminary Examination for Degree of B.L.

The following Books are prescribed for French and German :—

French.—*Montesquieu's* Esprit des Lois, Books i. to v. *Voltaire's* Charles XII. *Molière's* L'Avare. *Victor Hugo:* First Division of Selections ('Poésie') contained in L'Œuvre Complète de Victor Hugo (Extraits); Paris, Hetzel-Quantin, 1885. Some knowledge of the matter of the books prescribed as well as of their text is required. A passage from a work not prescribed may also be set. Moderate proficiency in French prose composition is required. Questions on French Grammar, Philology, and History will also be set. For these subjects reference may be made to *Saintsbury's* Primer of French Literature, to *Brachet's* Historical French Grammar, or *Clapin's* Primer of French Philology, and to *Charlotte Yonge's* Primer of French History.

German.—*Von Jhering*, Der Kampf um's Recht. *Schiller's* Prosa, ed. by Buchheim (Low's Series). i.-vii. *Lessing*, Minna von Barnhelm. *Goethe*, Hermann und Dorothea. Translation, composition, and some grammatical and historical knowledge will be required, as in French. Reference may be made to *Ravensberg's* German Grammar, *Selss's* Outline of the Literature of Germany, and *Sime's* History of Germany (Macmillan's Hist. Course for Schools).

Law Examination (for Degrees of B.L. and LL.B.).

In Public Law the subjects will be *Natural Law* and *International Law*, Public and Private. The books recommended for study are mentioned in the Synopsis of the Professor's Lectures.

In Civil Law the examination for both degrees will be on the History of the Law of Rome, and on its Principles as explained in the Institutes of Gaius and Justinian. Candidates for LL.B. will also be examined on Book xxvi., tit. 1 and 2, and Book xlv., tit. 1, of the Digest.

In Constitutional Law and History the subjects will be—(1) The Constitutional History of England from the Union of the Crowns to the first Reform Act. (2) The Constitution, Powers, and Privileges

[1] For Preliminary Examination in Arts, £1, 1s.; for First Examination in Law, £2, 2s.; for Second Examination in Law, £2, 2s. No fee is payable in respect of any Examination after the Second Examination in Law.

of Parliament from 1295, including (in outline) the Law relating to Parliamentary Elections.

In the LAW OF SCOTLAND the subject will be the Municipal Civil Law. The works of Mr Erskine and Mr G. J. Bell are recommended to candidates.

In CONVEYANCING the subject of Examination will be the Constitution of Heritable Rights, irredeemable and redeemable, and their Transmission *inter vivos* and *mortis causâ*.

In MEDICAL JURISPRUDENCE the subjects will be—(1) Persons found dead; (2) Contusions; (3) Rape; (4) Poisoning by Mercury; (5) Criminal Responsibility.

In POLITICAL ECONOMY[1] the Examination will be on the subjects treated of in Mr J. S. Mill's "Principles of Political Economy." Candidates will also be expected to show some knowledge of the works of the recent writers mentioned in the Synopsis of the Professor's Lectures.

DATES OF EXAMINATIONS.

PRELIMINARY EXAMINATION FOR B.L.

14th October and 6th April—Latin, 9 and 11.30.

15th October and 7th April—Greek, French, and German, 11.30 and 2.30.

16th October and 8th April—Logic, 9.

17th October and 9th April—Moral Philosophy, 9.

14th October—Mathematics, 2.30; 15th October, 9; 6th April, 3; and 7th April, 9.

LAW EXAMINATIONS.

7th July and 27th October—Scots Law, 10; Constitutional Law and History, 3.

8th July and 28th October—Civil Law, 10; Constitutional Law and History, 3.

9th July and 29th October—Conveyancing, 10; Political Economy, 10; Medical Jurisprudence, 3.

10th July and 30th October—Public Law, 10.

Oral Examinations on 14th July and 3rd November.

[1] Optional instead of Conveyancing; but see *supra*, footnotes, pp. 299, 300.

Examination Papers for Degrees in Law.

B.L. PRELIMINARY EXAMINATION.

FRENCH.

Tuesday, 8th April 1890.

FIRST PAPER.—11.30 *to* 1.30 *o'clock.*

N.B.—Candidates are not required to translate, and answer questions on, more than three of the four passages.

Translate into English :—

I. Montesquieu, *L'Esprit des Lois*, ch. 5, *from* "Si l'on établit un corps fixe qui soit par lui-même la règle des mœurs," *to* "c'est ordinairement les ramener à la vertu."

1. When is the article used before *on*, and how is it to be accounted for etymologically?
2. *Lui-même;* give the plural, and the feminine, of this word.
3. *L'âge;* account for the circumflex.
4. *Dieux;* when is *x* used instead of *s?* and are there any exceptions?
5. *Il faut;* give past definite, past indefinite, future, and present subjunctive of this; and give a sentence with a different construction from the one here used.
6. *Fasse;* 3rd plural present, past definite, past indefinite, future, and imperfect subjunctive?
7. *En sorte que;* mention one or two synonymous conjunctions; as also some others requiring the subjunctive.
8. *De grandes choses, fondé de villes, donné de lois*; why not *des?*
9. Give 3rd singular and 3rd plural present, past definite, and future of *rappeler* and *ramener.*

II. Voltaire, *Charles XII.*, ch. 5, *from* "Le premier ministre changea bientôt d'avis. Le roi ne pouvait que négocier," *to* "de consentir au sacrifice du général Mazeppa."

1. *Pouvait;* give 3rd singular and 3rd plural present, past definite, and future.
2. *Il en donna;* add "to me," "to him," "to her," "to them."
3. *Il se servit;* put this in 3rd singular and 3rd plural feminine of the past indefinite (compound tense), with "of it" added to it, (*a*) negatively, (*b*) interrogatively.
4. *La caisse militaire prise;* state the cases in which the past participle is variable.

5. *Faire, savait, permit ;* 3rd singular and 3rd plural present, past definite, future, and present subjunctive.
6. *Un sérail ;* state rule regarding the plural of nouns in *-ail*, with exceptions.
7. *S'était fait livrer ;* if you substitute "*ils*" or "*elle*" for *Charles*, would any further change be required? Give reason.
8. *Deux cent mille ;* when do *cent* and *mille* take the sign of the plural?

III. Molière, *Le Bourgeois Gentilhomme*, iii. 3, *from* "*Madame Jourdain.* Ah! ah! voici une nouvelle histoire! Qu'est-ce que c'est donc, mon mari, que cet équipage-là? Vous moquez vous du monde," *to* "*Mons. J.* Ouais! notre servante Nicole, vous avez le caquet bien affilé, pour une paysanne!"

1. Give the 3rd sing. and plur., masc. and fem., negative-interrogatively, of the past indefinite (compound tense) of *se moquer.*
2. *De vous être fait enharnacher ;* if *vous* were feminine, would there be any change? Give reason.
3. *Avez-vous envie ;* give a few other phrases of *avoir* with a noun without article.
4. *Se railleront ;* give the 2nd sing. and 2nd plur. imperative of *s'en railler* (*a*) positively, (*b*) negatively.
5. *S'il vous plaît ;* account for the circumflex. Can you give any other verb-forms in *-aît?*
6. *Que vous menez ;* turn this into the past definite "which you have led."
7. *Céans ;* do you know the etymology of this? what adverb (or adverbs) would now be used instead?
8. *Dès ;* distinguish this from *des, dés.* Can you give any other words in which the accent is used to change the meaning?
9. *Je saurais, voir, faites ;* 3rd sing. and 3rd plur. present, past definite, future, and present subjunctive.

IV. Victor Hugo, *Extraits*, p. 65, *from* "Enfin, mort triomphant, il vit sa délivrance," *to* "Il dormait; il dormait confiant et tranquille."

1. Why not *triomphante?*
2. *Par la mort sacré ;* why not *sacrée?*
3. *On se le figurait ;* give the imperative of "*se le figurer*" (*a*) positively, (*b*) negatively.
4. *Lui ;* plural of *lui?*
5. *Son aigle ;* what remark have you to make on the gender of this word?
6. *L'œil ;* plural of *l'œil?*
7. Etymology of *ombre, dans, œil, depuis, enfin?*

SECOND PAPER.—2.30 *to* 4.30 *o'clock.*

I. Translate into French :—

Soon afterwards the Scottish throne became vacant through the death of a young girl, the last direct scion (*rejeton*) of the royal race. As many as sixteen candidates (say *pretenders*), more or less nearly related, presented themselves. The Scots sent word to ask Edward to decide (*judge*) as to which of the candidates had the best claim. This was, indeed, playing Edward's game. He consented to decide, but not as a mere umpire, but in virtue of his suzerainty over Scotland. When he preferred this pretension, he had arrived on the frontiers of Scotland with a numerous army, while the Scottish Lairds were just then assembled in council to receive him. For this reason, and on account of the country being divided between the different pretenders, resistance on their part was quite impossible. They allowed Edward to take the title he chose. After that he decided the question in favour of John Baliol. The latter was consequently proclaimed king of Scotland ; but as to him, Edward had resolved that Baliol should soon be compelled to cede the crown to him. In order to drive him to extremities, he exacted with the utmost rigour all the consequences of that title of suzerain which he had extorted, and which of itself was already irritating the Scotch.

II. 1. Sketch briefly the historical events connected with the career of the "Maid of Orleans."

2. Mention some of the principal events during the reign of Francis I.

3. Write short notes on any three of the following writers :—*Molière, Fénelon, Beaumarchais, Lamartine, Béranger.*

GERMAN.

FIRST PAPER.—11.30 *to* 1.30 *o'clock.*

Translate into English and answer the questions on three of the following passages :—

1. Von Jhering, *Der Kampf um's Recht* (p. 72), *from* „Aber es iſt unſere eigene Schuld," *to* „ſondern die praktiſche Durchführung der Grundſätze der Gerechtigkeit in allen Lebensverhältniſſen."

(*a*) Explain the formation of—rechtzeitig, vernehmlich, gleichbedeutend, ſelbſtverſtändlich.

(*b*) Give the plural of—unſere Schuld, an ihr, mit der Kraft, des Staats, in Schule.

(*c*) Give the principal parts of—verſtehen, liegt, erfahren.

2. Lessing, *Minna von Barnhelm*, act iii., scene 7, *from* „Von Tellheim.—Mache nicht, daß ich etwas Unrechtes von dir denken muß," *to* „Ich thu' es ja nur der Intereſſen wegen."

(*a*) Give the plural of—ich muß, du willſt, von dir, für ſein Land, zu der Sache.

(*b*) Parse—verbunden, gefochten, gehört, derweile, Geld die Menge, der Intereſſen wegen.

3. Schiller, *Die Belagerung von Antwerpen*, *from* „Dieſe ſchleunige Ausbeſſerung der Brücke," *to* „wenn man auch nur den Schein davon zu erhalten wüßte."

(*a*) Give nom. and gen. sing., and nom. plur., with the definite article of—Brücke, Schlage, Geiſtes, Folgen, deſſelben, Flotte, Hoffnung, Feinden, Geheimnis, Monate, Stunden.

(*b*) Decline ein wahres Wunderwerk (in the plural without article), and the German for "his work."

(*c* Give the 3rd sing. present, imperfect, and perfect indic. act. of—zuvorzukommen, herzuſtellen, gewennenn, erhalten.

4. Goethe, *Hermann und Dorothea*, Euterpe, verses 1 to 11.

(*a*) Give the nom. and gen. sing., and nom. plur., with the definite article, of—Männer, Mutter, Sohn, Hauſe, Bank, Pferde, Knecht, Garten, Ställe, Mauern, Städtchens.

(*b*) Give the 3rd sing. present, imperfect and perfect indic. active of—ſprachen, ſich unterhaltend, ging, fand, durchſchritt, ließ zurück, trat.

(*c*) Give synonyms of—erſt, daſelbſt, Pferde, behende, jeglichen.

SECOND PAPER.—2.30 *to* 4.30 *o'clock.*

I. Translate into German :—

William had much grief in his own house. His eldest son, Robert, whom he had left in Normandy (f., with def. article), to govern in his name, took up arms against him ; and a war broke out between father and son. In one of the battles that took place, they met hand to hand, but the young prince did not recognise his antagonist, whose face was concealed by the helmet. A fierce fight followed, till the king was wounded in the arm and thrown from his horse. But when he called for assistance, his voice discovered him to his son. Then Robert was so shocked with (entſetzt über) what he had done, that he fell on his knees and prayed for pardon. The King was so pleased with his son's noble conduct that he forgave him everything, and took him with him to England. Soon after he placed him at the head of an army, and sent him against Malcolm, King of Scotland, who had made an inroad into the English kingdom.

II. Give some account of the political events that led (*a*) to the siege of Antwerp ; (*b*) to the battle of Jena.

EXAMINATION PAPERS FOR LL.B. AND B.L.

I. SCOTS LAW.

Monday, 1st July 1889.—10 *to* 2 *o'clock.*

(*Three questions only out of each Group to be answered.*)

I.

1. What are (*a*) the grounds, and (*b*) the legal results on person and property, of a judicial separation of husband and wife?
2. What is the presumed duration of the engagements of the different kinds of employés?
3. What is legitim? How and to what effect may it be (1) barred and (2) discharged?
4. What are the powers of trustees in the management of heritable property (*a*) at Common Law and (*b*) by Statute?

II.

5. State shortly the rules which regulate the ownership and use of (1) the *solum*, (2) the banks, and (3) the water of (*a*) navigable rivers and (*b*) navigable lakes.
6. What is a servitude of support? How may it be constituted?
7. What subjects are attachable in virtue of the landlord's hypothec, and how long do they continue so?
8. In bankruptcy, contrast (1) the procedure leading to a discharge on dividend and to a discharge on composition, and (2) the effect of each.

III.

9. What is the effect of fraud on a contract, and what remedy or remedies are open to the defrauded party?
10. State the respective rights and liabilities of principal and agent *inter se*, and in questions with third parties dealing with the agent. Does the fact of the principal being a foreigner make any difference?
11. Distinguish between (*a*) Pledge, (*b*) Hypothec, (*c*) Right of retention, and (*d*) Compensation. Give an illustration of each.
12. What is a common carrier? Specify the extent of his responsibility under the Edict, and explain how far, if at all, that responsibility is limited in the case of a carrier by sea.

IV.

13. Explain generally the nature of a Bill of Lading, and distinguish between it and a Charter Party. Is the Bill of Lading conclusive as to the contract between the shipper and the shipowner?
14. Explain and illustrate the doctrine of privilege in cases of defamation.
15. In maritime law, what are (1) unseaworthiness and (2) deviation? Explain the effect of each on a contract of marine insurance.

16. An insolvent Joint Stock Company has to be wound up. State the modes in which this may be done, and the rules regulating liability to contribute to the assets.

II. CONSTITUTIONAL LAW AND HISTORY.

FIRST PAPER.

Monday, 1st July 1889.—3 *to* 5 *o'clock.*

(*Six questions only to be answered.*)

1. Describe the views and aims of the Court Party and the Opposition respectively during the reign of the first Stuart monarch of England.
2. When were monopolies abolished? State their previous history, and mention the chief arguments for and against them.
3. Give a short estimate of the character and political opinions of Charles I., and state briefly the case of Parliament against him.
4. What events of constitutional importance occurred during the "Commonwealth"?
5. Describe in outline the chief subjects of political controversy during the reigns of Charles II. and James II.
6. Twelve new peers were created by Queen Anne. State the circumstances. Discuss generally the subject of the peer-creating power.
7. Sketch the political history of the American Rebellion (1770-1782).
8. Describe the policy of William Pitt (1784-1805), and give an estimate of his character.
9. Trace the history of religious tests down to the Catholic Relief Act (1829).
10. State briefly what you know of any two of the following persons: —Sir John Eliot, Laud, Hampden, Cromwell, Lord North, John Wilkes.

SECOND PAPER.

Tuesday, 2nd July 1889.—3 *to* 5 *o'clock.*

(*Six Questions only to be answered.*)

1. Trace the development of Parliament from Anglo-Saxon times down to 1295.
2. Enumerate and explain the powers and privileges acquired by Parliament between the reign of Edward I. and that of Edward IV.
3. "The Constitution was overthrown by the Shrewsbury Parliament" (*temp.* Richard II.). Explain and discuss this statement.
4. Contrast the independence of Parliament under the Lancastrians with its subservancy under the Yorkists and the Tudors. Illustrate and explain.

5. What privileges were expressly claimed by Parliament in the reign of James I? State the circumstances.

6. How far were the proceedings of the Long Parliament (*temp.* Charles I.) constitutional? When did they become revolutionary?

7. Enumerate the powers and privileges of Parliament secured by the Bill of Rights, and state shortly what led to the passing of the Bill.

8. In 1728 and 1738 the publication of Parliamentary debates was declared to be a breach of privilege. Trace the steps which led to the freedom of such publication.

9. Sketch briefly the history of Parliamentary Reform from 1766 (Pitt's proposal) to 1832.

10. Give the substance of the chief Parliamentary Reform Acts of the present century. Explain their respective objects. Discuss the principles on which the Parliamentary franchise can be safely extended.

III.—ROMAN LAW.

Tuesday, 2nd July 1889.—10 *to* 2 *o'clock.*

N.B.—*Candidates for LL.B., or for B.L. on the LL.B. standard, must answer all the questions in Groups I. and V., and three questions in each of the other Groups.*

Candidates for B.L. not aiming at the LL.B. standard must answer two of the questions in Group I., and three in each of Groups II., III., and IV., but need not answer any in Group V.

First Group.

1. What was the position of the colonial latins in the time of Gaius? To what extent were their rights in private life inferior to those of Roman citizens? How did their condition compare with that of Junian latins?

2. In what respects, as regards form and effect, did an edict propounded by a praetor on his *album* differ from a *lex* or a *senatusconsultum?*

3. Two important legislative efforts are attributed to Theodosius II.—the so-called Valentinian Law of Citations and the Theodosian Code: describe them.

Second Group.

4. Who were included in a man's *familia?* Explain the exact relation in which each dependent member of it (or class of dependent members) stood to the family head, distinguishing in so doing between the early empire and the Justinianian period.

5. There was a particular variety of tutory which, in the time of Gaius, the tutor was allowed to cede to another person: what was it?

What justified the cession in that particular case? What was the effect of it?

6. What, in the Justinianian law, were the powers of a tutor in the matter of alienating the property of his pupil ward? Had he unlimited freedom in granting discharges to his ward's debtors? Suppose a tutor employed part of his ward's funds for his own purposes, what was the consequence?

7. What was the origin of the *nudum jus Quiritium* which Justinian abolished?

Third Group.

8. Suppose A stole B's wool and converted it into a web of cloth, to which of them did the latter belong? What if it was a bar of silver that was stolen, and it was made into a table ornament? What actions had B against A, and were they the same in both cases?

9. Justinian says there was only one exception to the rule that a man could acquire nothing through the agency of a free person who was neither a subject member of his family nor in good faith held by him as a slave: what was it?

10. Both the civilian and the soldier might make a valid nuncupative (or unwritten) testament: was there any difference in the requirements of law in regard to them? Suppose a man represented that a testator had, without writing, and in the absence of witnesses, desired his heir to give something forming part of the inheritance to him (the representer), was the representation one that a court of law would take cognisance of? If so, how would it proceed?

11. What was the order of succession on intestacy to a person of free birth as established by the prætorian edict? Did the "*liberi*" of the Edict include all a man's descendants, or only certain classes of them?

Fourth Group.

12. Taking the contracts enumerated by Gaius and Justinian under the four heads of real, verbal, literal, and consensual, say which of them gave rise to merely unilateral obligation, which to obligation necessarily bilateral, and which to obligation only contingently bilateral.

13. What was that form of extinguishing an obligation which Gaius speaks of under the name of *liberatio per aes et libram?* What was acceptilation? Had a *pactum de non petendo* the same effect? What was novation, and what the condition of its extinctive operativeness under the Justinianian rules?

14. What was the nature of the civil procedure *per sponsionem* referred to by Gaius, and what were its two forms?

15. What was the essential distinction between the procedure *per legis actiones* and that *per formulas?* What were (1) *vindicationes*, and (2) *condictiones?* What was the peculiarity of the *condictio furtiva?*

Fifth Group.

16. Illustrate from tit. D. *de A. E. et V.* (xix. 1) some of the many circumstances in which a vendee might proceed against his vendor by an *actio empti*.

17. The following case for opinion was submitted to Scaevola (fr. 52, § 1, D. *de A. E. et V.*):—"Praedium aestimatum in dotem a patre filiae suae nomine datum obligatum creditori deprehenditur: quaesitum est, an filius, qui hereditatem patris retinet, cum ab ea se filia abstinuisset dote contenta, actione ex empto teneatur, ut a creditore lueret et marito liberum praestaret." Paraphrase this, omitting none of the facts; and answer the query, appending your reasons.

18. Explain this statement of Ulpian's in fr. 12, § 4, D. *de R. N.* (xxiii. 2):—"Adoptivae sororis filiam possum uxorem ducere: cognata enim mea non est filia ejus, quia avunculus nemo fit per adoptionem et eae demum cognationes contrahuntur in adoptionibus, quae legitimae essent, id est quae adgnatorum jus haberent. pari ratione et sororem patris mei adoptivi possum ducere, si non fuit eodem patre nata."

IV.—CONVEYANCING.

Wednesday, 3rd July 1889.—10 *to* 2 *o'clock.*

(*Questions* 6, 8, 9, 10, *and* 11 *must be answered, and seven only of the others.*)

1. State briefly the alterations in the form of the ordinary disposition of lands held feu made respectively by the Lands Transference Act, 1847, the Titles to Lands Act, 1858, and the Conveyancing Act, 1874.

2. A, infeft on a disposition with alternative holding, but unentered, sold the lands to B, and died before granting a conveyance. C, his son, having refused to complete a title or give effect to the sale, B obtained decree of adjudication in implement against him.

State, *in detail*, the steps by which B could thereafter have completed a public title in the lands, according as he had done so (1) in 1846, (2) in 1866, and (3) now,—giving alternative modes where competent and equally expedient.

3. Explain the alterations in the law in regard to prescription of titles to heritage made by the Conveyancing Act of 1874; and supposing that A had bought lands held feu from B, what would now constitute a prescriptive title, supposing that it started with that of an adjudging creditor?

4. What was the principal alteration made in the Charter of Confirmation by the Lands Transference Act, 1847; (2) how far did it apply to the combined Charter of Resignation and Confirmation; and (3) when did the combined deed become no longer necessary? Give the reasons for 2 and 3.

5. A, infeft but unentered on a Disposition with an *a me* holding,

died intestate. Detail the steps by which his heir B could have obtained a complete title in the lands (1) in 1846; (2) in 1866; and (3) in 1886, assuming that the superior was a pupil without tutors, or was *ab agendo.*

6. The destination in a Disposition of lands held feu which A had bought was to "A, and B my wife, in conjunct fee and liferent, but for B's liferent use allenarly, and to C, our son, and his heirs," and the deed was recorded on a warrant in these terms. B died; then C died, leaving a son F. On A's subsequent death, F served heir in special to C, and, having recorded the decree, disponed the lands onerously to O by Disposition in ordinary form, which O recorded. O, in 1870, has again sold the lands, but his title is objected to. To what objection is it open, and how can it be remedied? F is dead.

7. State the difference between what is necessary in order (1) to transmit to a purchaser, or (2) to vest in an heir an obligation to relieve from public burdens, according as that is contained (*a*) in a feu-charter, or (*b*) in an ordinary disposition of the lands to which the burdens apply? Explain the principle involved.

8. A, having built three houses on land in which he was infeft, died, leaving a Trust-Disposition and Settlement, in which he directed his trustees to convey one of the houses to each of his younger children, C, D, and E, under burden of a certain feu-duty payable from each to his eldest son B, and to convey the rest of the land to him. Describe the simplest method by which these directions could be given effect to, so as to give each child a valid title.

9. A, infeft, having destined his estate by *mortis causa* Deed to the heirs male of his body, whom failing, to the heirs female of his body, died, leaving a son B, and two daughters E and F, and B completed his title under the distination. E having died, leaving a son O, on B's subsequent death intestate, leaving a daughter X, a competition for the estate arose between F, O, and X. Which of them will prevail, and for what reason?

10. A, in his contract of marriage, disponed his estate, in which he was infeft, to "A and B (spouses), for their liferent use allenarly, and to the *heirs* of the marriage in fee," and infeftment was taken in these terms. Three children were born of the marriage, E and F, sons, and G, a daughter. E having got into debt, granted, in consideration of a sum paid to him by his father A, a discharge in A's favour of all his rights under the contract, whereupon A resettled the estate on his daughter G. On A's subsequent death, predeceased by E without issue, a competition arose between F, the surviving son, and G; which of them will prevail, and for what reason?

11. A, under reservation of his own liferent, disponed by delivered deed his estate of X "to B and C, my nephews, and failing issue of either, to the survivor;" and his estate of Z to "B and C, my nephews, and the heirs of their respective bodies, whom failing, to the survivor." Explain the difference as regards the position of C, and his rights

under the respective destinations, according as (1) B predeceased C, without issue and intestate; (2) B predeceased C, leaving a settlement disposing of his interest in the lands to his widow; and (3) B predeceased C, leaving an infant son, who died next day.

12. What are the provisions of the Conveyancing Act, 1874, in regard to the liability of those who take land by donation, by succession, or by singular title for ordinary heritable securities affecting the lands? and (2) by what mode can the holder of such a security make the personal obligation therein available against the new proprietor of the security subjects?

13. When the debtor in a Bond and Disposition in Security wishes to pay up the debt, but the creditor cannot give a discharge, what is his remedy? or, when the creditor sells the security subjects under the powers of sale in his Bond, by what steps can the purchaser get the subjects cleared of that and other Bonds—(1) when there is a surplus after paying the selling creditor's debt? and (2) when there is none?

14. State the general rule of law which regulates the mode of granting heritable security for future or fluctuating debts, and explain by what methods such security is generally given, and to what extent a valid security can be given according to the method adopted.

15. A, in right of a Bond and Disposition in Security, died intestate in 1870, leaving a daughter B, who succeeded to him, and who had been previously married to C, without any marriage-contract. C died intestate in 1880, and his executor claimed the Bond as having passed to C in right of his wife. Is the claim well or ill founded? Give the reason.

V.—MEDICAL JURISPRUDENCE.

Wednesday, 3rd July 1889.—3 *to* 5 *o'clock.*

I.—*Death by Asphyxia.*

Homicide, suicide, or accident: In favour of which of these is the presumption strongest in hanging, throttling, drowning, strangling, respectively?

II.—*Starvation.*

1. Under what circumstances may starvation become a subject of legal enquiry?

2. What is known as to the length of time during which a man may survive when totally deprived of food?

3. What effect has access to water on the period during which he may survive?

III.—*Infanticide.*

1. In reference to this crime,—not as to civil questions,—what is the legal meaning of the phrase "born alive"?

2. Mention, without going into medical details, the proofs, medical and general, by which live birth may be conclusively established?

IV.—*Poisoning by Opium.*

1. What are the leading phenomena in poisoning by opium?
2. At what age is this drug most apt to prove fatal?
3. For what constituents of opium would a chemical expert search in making an analysis for its detection?

V.—*Testamentary Capacity.*

1. State what enquiries you would make in order to enable you, as a legal adviser, to determine whether or not a person was capable of making a will.
2. A man who has an insane delusion makes a will, and immediately afterwards commits suicide. State your opinion regarding the validity of his will, and give reasons for your view.

VI.—PUBLIC LAW.

Thursday, 4th July 1889.—10 *to* 2 *o'clock.*

(*Five answers in each group will suffice, but answers to the first four questions in each group are imperative.*)

I.—*Natural Law.*

1. Define Natural Law (*a*) in the general and (*b*) in the jural sense.
2. Define Positive Law (*a*) in the popular and (*b*) in the scientific sense, and explain the conditions on which they become coincident.
3. Trace rights and duties to the facts of subjective and objective existence, and explain the manner in which we become cognisant of these facts.
4. Trace the right of property to its ultimate source, and explain its limitations from the subjective and objective side.
5. Explain the consequences of refusing to accept the facts of existence as revealed by observation, subjective and objective, and illustrate your explanation by the political history of France since the revolution of 1789.
6. What did the Greeks mean by the judgment of Zeus, and the mediæval writers by the *proportio?*
7. Does the alleged pessimism of the Buddhists admit of explanation on optimistic principles?

II.—*Public International Law.*

1. Define the Law of Nations, and explain the consequences of resting it on the independence of States as opposed to their interdependence.
2. State the doctrine of Recognition, trace it to its source in nature,

and explain the relation in which it stands to the other doctrines of the law of nations.

3. Distinguish between international and interethnical recognition, and between plenary and partial international recognition.

4. Explain the functions of an ambassador or other political agent, and of a consul, respectively.

5. Explain the ethical grounds on which intervention, when possible, takes precedence of neutrality.

6. To what extent are neutrals at liberty to trade with belligerents?

7. State and criticise the doctrine of contraband of war.

8. State the "three rules" embodied in the Treaty of Washington of 8th May 1871, and explain their objects and results as exhibited by the arbitration at Geneva in the Alabama case in 1872.

III.—*Private International Law.*

1. Trace the doctrines of private international law to the doctrine of recognition.

2. State and criticise the doctrine of Hüber, Story, and their followers.

3. What relations are governed by the *lex loci contractus*, by the *lex loci rei sitæ*, by the *lex domicilii*, and the *lex fori*, respectively.

4. Do separate States recognise each other's public municipal law?

5. To what extent and on what grounds is criminal law an exception to the above rule?

6. On what grounds was extradition pronounced by the Institute of International Law, at its meeting at Oxford in 1880, to be a right by the common law of nations, apart from convention?

7. On what conditions are foreign judgments enforced?

VII.—POLITICAL ECONOMY.

Wednesday, 3rd July 1889.—10 *to* 2 *o'clock.*

(*Answer twelve questions only.*)

1. What are the principal causes of market fluctuations? Indicate and explain the action of any forces in the modern industrial world that tend to increase or diminish the frequency and intensity of such fluctuations.

2. State and briefly examine the principal theoretical exceptions which have been raised against a policy of "pure Free Trade." Explain carefully what you understand by "pure Free Trade."

3. Trace the effects of a duty upon the import of wheat.

4. Examine the effects of Bounties on the export of any form of agricultural produce. Consider especially whether there would necessarily be a fall in price in foreign markets to the extent of the bounty.

5. How does Cost of Production affect the value of the precious metals, (*a*) as regards general prices, (*b*) as regards their relative values.

6. If silver falls in value relatively to gold 30 per cent., what are the alternatives, when equilibrium is restored, of the position of general prices in gold and silver-using countries? Show that, with such a fall, they could not both remain at the old level.

7. State accurately the theory of population as given by Malthus, and estimate its effect upon economic theory and economic legislation.

8. Discuss, from the economic standpoint, the proposition that "the movement of progressive societies has been from status to contract."

9. State briefly the economic theory of rent, and examine the effects on rent (agricultural) of great improvements in the means of transport.

10. Examine the incidence of a ten per cent. tax upon all existing feu-duties.

11. Apply Adam Smith's canons of taxation to a criticism of the Income tax, the tax upon tea, the tax upon silver plate.

12. Examine practically and historically the principal evils of inconvertible notes. Theoretically, are there any possible advantages?

13. What are the limits to a rise of general prices in a gold-using country?

14. Distinguish between Final and Total Utility, and illustrate by considering the effect upon consumption of a tax upon sugar.

15. What are the principal causes which affect the price of a foreign bill of exchange?

16. Examine the causes which determine the rate of interest upon first-class securities. How is it that (*a*) the rate changes slowly compared with movements in the rate of discount in the money market, (*b*) that the return to securities, where the risk is practically *nil*, becomes uniform? As regards *b*, what other influences besides risk sometimes operate upon the rate of interest yielded by an investment?

Graduates in Law.[1]

DEGREE OF LL.B., 1886-1890.

1886.

*Frank Towers Cooper, M.A.
*John Alexander Maccallum, M.A.
*Anderson Steel, M.A.
John Stewart Watt, M.A.
*John Garland, M.A.
Robert Hugh Miller, M.A.
*John Graham Stewart, M.A.
*Frederick Parker Walton, B.A.

1887.

*John James Cook, M.A.
James Duff, M.A.
*John French, M.A.
*William Harvey, B.A.

[1] The names of all the Graduates in Law since the institution of the Degrees to 1888 will be found in List of Graduates of the University, published in 1889, pp. 125-127, and also in previous Calendars.

* Passed with distinction. "Distinction" was instituted in October 1885. Several of the Graduates of 1885-88 passed part of their Examinations before any record of distinction was preserved.

*Alfred Alexander Murray, M.A.
*William Thomson, M.A.
Andrew Wishart, M.A.

1888.

*James Allison, M.A.
*Andrew Macbeth Anderson, M.A.
Patrick James Blair, M.A.
*James Avon Clyde, M.A.
*Andrew William Donald, M.A.
*David Dougal, M.A.
*William Galbraith, M.A.
*Peter Fraser Mackenna, M.A.
*Robert Miller, M.A.
J. C. Dove Wilson, M.A.

18th April 1889.

Claud Patrick Boswell, M.A.

1st August 1889.

David Anderson, M.A.
Archibald Brown Campbell, M.A.
*Matthew Robin Greenlees, M.A.
*William Hunter, M.A.
Francis Kinloch, B.A.
*George Fleming Mathers, M.A.
*John Hepburn Millar, M.A.
*Charles David Murray, M.A.
*Coventry Dick Peddie, M.A.
John Ritchie, M.A.
*Hamish Hay Stuart, M.A.
Arthur Moodie Thomas, M.A.

30th November 1889.

*Andrew Henderson Briggs Constable, M.A.
*Alistair Davidson, M.A.
James Arthur Hope, M.A.
*Robert Bird Kerr, M.A.
*Alexander Thomson, M.A.

18th April 1890.

William Scott Currie, M.A.
Alexander David Russell, M.A.

DEGREE OF B.L.

1886.

*James Anderson
*John Burns
William Croft Gray
Joseph Mark Harkom
William King
William Harvey
*Robert Macdougald
John Shaw Soutar
Dudley Stuart
*James Wilkie
*David Mackay Wilson

1887.

*David Keith Murray
*George Wilton Wilton

1888.

James Millar Brown
*Hugh Campbell, M.A.
*Alexander Duncan.

18th April 1889.

*Robert Liddell Cockburn.
William Stowell Haldane.
John Lumsden Macpherson, M.A.

1st August 1889.

John Glover
John James Waugh

18th April 1890.

Duncan Cameron

DEGREE OF DOCTOR OF LAWS (LL.D.).[1]

The Degree of Doctor of Laws is conferred *honoris causâ tantum*. It was first granted in 1695. Previously to 1751 it had been conferred on seven persons only. Since then more than 400 names, including some of the most distinguished in Europe, have been added to the list. The degree is not conferred in absence except in very special cases.

* Passed with distinction. See note on previous page.

[1] Those to whom the Degree has been offered, if unable to be present at the Graduation Ceremonial immediately ensuing, may present themselves at any subsequent Ceremonial, on giving at least a week's notice.

The following is a list of those upon whom the Degree of Doctor of Laws has been conferred within recent years : —[1]

1886.

R. M. Cust
A. V. Dicey
Thomas Dickson
Oliver Wendell Holmes, M.D.
F. J. Mouat, M.D.
Sir Charles Nicholson, Bart., M.D.
Leonhard Schmitz, LL.D.
John Small, M.A.
J. Gregory Smith
Sir Charles W. Wilson, C.B.
John Wilson
Stéphane Tarnier
Noah Porter, D.D.

1887.

Sir Bhagvat Singh, K.C.I.E.
William Dittmar
Edward Dowden
Asa Gray, M.D.
Robert Halliday Gunning, M.D.
Alexander Forbes Irvine
[2] Albert von Kölliker, M.D.
[2] Charles James Lyell, M.A., C.I.E.
[2] Francisque Xavier Michel, F.S.A.
A. W. Momerie, M.A., D.Sc.
Henry John Roby, M.A.

1888.

Sir William Aitken, M.D.
Hon. Sir Charles C. S. Bowen
Alexander Cameron
[2] Giovanni Capellini
[2] Mortimer S. Howell, C.I.E.
Hon. Sir Nathaniel Lindley
Norman Macpherson
John Murray, Ph.D.
Thomas Graham Murray
[2] W. H. Walshe, M.D.

18th April 1889.

[2] Sir Syed Ahmed Khan, Bahadûr, K.C.S.I.
J. E. T. Aitchison, C.I.E., M.D., F.R.S., &c.
[2] Francis Day, C.I.E., &c.
[2] Hon. David Dudley Field
[2] Rudolf von Jhering, Dr. Jur.
William Mackintosh, M.A., Q.C.
Maurice Paterson, B.A.
Richard Quain, M.D., F.R.S., &c.
[2] Rudolf von Roth, Ph.D.
Whitley Stokes, C.S.I., C.I.E., D.C.L., &c.
James Ward, M.A., D.Sc.
[2] William Dwight Whitney

30th November 1889.[3]

[2] Professor James D. Dana, Yale University.
[2] Professor C. Gegenbaur, University, Heidelberg.
[2] Professor E. Haeckel, University, Jena.
[2] Professor E. E. Kummer, University, Berlin.
[2] Professor Konrad Maurer, University, Munchen.
[2] Mons. Barthélemy St. Hilaire, Membre de l'Académie Française.
[2] Mons. Jules Simon, Membre de l'Académie Française, &c., &c.
[2] Herrn Geheimrath Heinrich von Sybel, Director der Kgl. Preuss. Staatsarchive.
[2] Professor B. Windscheid, University, Leipzig.

[1] The names of those who received the Degree prior to 1859 will be found in the "Catalogue of the Graduates in the Faculties of Arts, Divinity, and Law of the University of Edinburgh since its foundation," published in 1858, and of those who received the Degree from 1859 to 1888, both years included, in the List of Graduates published in 1889, and in previous Calendars.

[2] Conferred *in absentia*.

[3] Tercentenary Graduates unable to be present in 1884.

18th April 1890.

Sir Benjamin Baker, C.E.
Right Hon. Henry Chaplin, M.P., Minister of Agriculture.
Sir Dyce Duckworth, M.D.
Sir John Fowler, Bart., C.E.
[1] James Anthony Froude, M.A., LL.D.
Joseph H. Gilbert, M.A., Ph.D., LL.D., F.R.S., Sibthorpian Professor of Rural Economy, University of Oxford.
James Hardy, Secretary of Berwickshire Naturalists' Club.
Sir John Kirk, M.D., G.C.M.G.
General Robert Maclagan, R.E.
John Marshall, M.A., Rector of Royal High School, Edinburgh.
Right Hon. J. P. B. Robertson, M.P., Lord Advocate of Scotland.
Frederic Seebohm, F.S.A., Barrister-at-Law.
[1] Emeritus-Professor C. Piazzi Smyth, F.R.A.S., &c.
Spencer Walpole, Lieutenant-Governor of Isle of Man, &c.

APPLICATIONS FOR SCHOLARSHIPS AND BURSARIES.

Candidates must enter their names and addresses, and exhibit the necessary certificates at the Office of the Clerk of Senatus at least one week before the date of the competition. Applicants for the second and third year Grierson Bursaries and for the Cairns Bursary must apply on or before 15th October, and must state clearly what distinctions they have attained in the Law Classes of the previous year. *See* Nos. II. and III. below.

Where the competition is open to Graduates, their standing will be computed from the date of the Graduation Ceremonial immediately following the completion of their Law Examinations.

I.—BURSARIES.

No. of Foundation.	Year of Found.	Name of Founder.	Total Annual Income.	No. of Bursars.	For Years.	Annual Allowance to each Bursar.	Patron.
I.	1871	The Sibbald Bursaries.	About 150 0 0	5	4	30 0 0	Trustees of Dr J. R. Sibbald.
II.	1873	The Grierson Trustees.	80 0 0	3	1	About 26 13 4	Senatus.
III.	1873	Geo. Cairns, Solicitor.	18 19 4	1	1	About 18 19 4	Senatus.
IV.	1878	DrAndrew Thomson.	100 0 0	4	4	25 0 0	Trus. of Dr Thomson.

[1] Conferred *in absentia*.

I. These Bursaries may be held during the Curriculum in Law. *See* p. 204.

II. There are three Grierson Bursaries, each of the value of £26, 13s. 4d. annually. Deserving students from the parishes of Crawford or Leadhills, applying to the Clerk of Senatus on or before the 1st day of October, are entitled to preference, if they satisfy certain conditions;[1] and if the applicant is commencing his first Winter Session of the Law Curriculum he will be entitled to hold the Bursary for three years, provided "he prosecutes his studies with proper diligence."[1] The subjects of examination are Elementary Latin, English, and Arithmetic. The examination of preferential candidates will take place on Saturday, 26th October 1889, at 9 o'clock.

Failing preferential candidates, the Bursaries will be tenable for one year only, and will be awarded to candidates who have attended one year in the Faculty of Arts in some University, and have applied as above-mentioned to the Secretary of the Senatus. 1. In the case of those commencing their first Winter Session in Law, the award will be to the candidate who has passed highest in Latin and Moral Philosophy at the Arts Graduation examination in October. 2. In the case of candidates commencing their second Winter Session—to the most distinguished law-student of that standing, who, if not a Graduate in Arts, has passed satisfactorily in Latin and Moral Philosophy at the Arts Examination, either in October or earlier. 3. In the case of candidates commencing the third Winter Session of the Law Curriculum—to the most distinguished law-student of that standing who has passed satisfactorily in Latin, Moral Philosophy, and Logic at the Arts Examination in October or earlier. See Regulations, CALENDAR 1877-78, p. 370. *Bursars in* 1889—First year, *James Ballantine, M.A.* Second year, *J. Taylor Cameron, M.A.*; *James Hastie* (Preferential Bursar). Third year, *A. F. Smith, M.A.*

III. The competition for the Cairns Bursary, which is tenable for one year only, and is not subject to any preferences, is subject to the same conditions as those for the second year Grierson Bursary. This Bursary is open to Students who have completed one year in the Law Faculty. *Bursar*—1889, *R. M. Williamson, M.A.*

IV. For the *Thomson Bursaries* application should be made to Messrs Traquair, Dickson, & Maclaren, 11 Hill Street. Candidates of the name of Thomson or Traquair, or natives of the town or county of Dumfries, or of the city of Edinburgh, are preferred. The Examination is in Latin and Moral Philosophy, and is the same as the October Examinations in those subjects for M.A. See CALENDAR 1879-80, p. 345. *Bursars*—1887, *J. W. Forbes, M.A.* 1888, *T. B. Morison.* 1889, *Robert Munro, M.A.*

[1] See Calendar 1877-78, p. 370. By "proper diligence" is understood regular attendance on Classes, and on Class Examinations with reasonable proficiency.

II.—VANS DUNLOP LAW SCHOLARSHIPS.

General Regulations.

Four Vans Dunlop Scholarships, each of the value of about £100 per annum, and tenable for three years, are more or less directly connected with the Faculty of Law :—

I. *Vans Dunlop Scholarship in Commercial and Political Economy and Mercantile Law*, for which both Law and Arts Students are eligible. The regulations for competition are as follows :—

(*a.*) Candidates are subject to an Examination testing their knowledge (1) of Commercial and Political Economy, and (2) of Mercantile Law—two papers on the former and one on the latter.

(*b.*) The Competition is open to all who have been Matriculated Students for not less than two years, who have not discontinued attendance at the University for more than one year, who have regularly attended the Class of Commercial and Political Economy and Mercantile Law, and who at the time of the competition are Matriculated Students.

(*c.*) The Professor of Political Economy and an Examiner appointed by the Senatus are the Examiners.

Next vacancy in October 1891.

Scholars—1888, *A. H. Briggs Constable, M.A.; proxime accessit—J. M. Irvine, M.A., B.Sc.*

II. *Vans Dunlop Scholarship in the Law of Nature and Nations, Civil Law, and Constitutional Law and History.*

(*a.*) The Competition is open to all Candidates who, within the three years immediately preceding the date of competition, shall have graduated in Law in this University, or shall have passed the Graduation Examination in the three subjects of examination for the Scholarship : provided they have written papers of the LL.B. standard at the Graduation Examination, and have obtained an average of not less than 75 per cent. of marks in these subjects.

(*b.*) The Competition is by written Essays on branches of law to be announced at least one year before the date of competition. The precise subject of each of the essays will be set on the conclusion of the Graduation Examination in October.

(*c.*) The Examiners are the Professors of the prescribed subjects, assisted by the additional Law Examiners.

Next vacancy in October 1892.

Scholars—1886, A. W. Donald, M.A. 1889, *J. A. Irvine*, M.A., B.Sc.

III. *Vans Dunlop Scholarship in Scots Law and Conveyancing.*

(*a.*) The Competition is open to all Candidates who, within the three years immediately preceding the date of competition, shall have graduated in Law in this University, or shall have passed the Gradua-

tion Examination in Scots Law, Conveyancing, and Medical Jurisprudence: provided they have obtained at the Graduation Examination an average of not less than 75 per cent. of marks in these three subjects.

(*b.*) The Competition is by written Essays on (1) the Civil Law of Scotland; (2) the Criminal Law of Scotland; and (3) Conveyancing, the particular branches of which will be announced at least one year before the date of competition. The precise subject of each essay will be set on the conclusion of the Graduation Examination in October 1890.

(*c.*) The Examiners are the Professors of the prescribed subjects, assisted by the additional Law Examiners.

Next vacancy in October 1890.

Scholars—1887, *John Graham Stewart, LL.B.*

IV. *Vans Dunlop Scholarship in History.*

The Competition is open to all Matriculated Students who have regularly attended classes in the University for not less than two and not more than six years, who have also attended one or more courses of Lectures either by the Professor of History or by the Professor of Ecclesiastical History, and who have not discontinued attendance at the University for more than one year immediately preceding the period of Competition.

The Scholarships will be awarded by competitive examination. The Examiners are the Professor of History, the Professor of Ecclesiastical History, and either the Professor of Humanity or the Professor of Greek.

The conditions of tenure are the same as those applicable to the other Vans Dunlop Scholarships in the Faculty of Arts.

Next vacancy in October 1892.

1886. James Marwick, M.A. | 1889. *D. P. Heatley*

CONDITIONS OF TENURE.

Each holder of No. II. and No. III. of these Scholarships will be required to deliver, to the satisfaction of the Faculty of Law, two courses of three lectures each on one of the subjects of examination for the Scholarship, viz., one course in the second, and the other in the third year of his tenure.

V. *Lorimer Scholarship Fund.*

This Scholarship, founded in memory of the late Professor Lorimer, will probably be awarded to the most distinguished student of Natural Law and International Law in the course of 1891. The value of the Scholarship will be announced when the requisite capital has been obtained.[1]

[1] *Note.*—Further contributions will be gratefully received by the Secretary of the Senatus, or by Professor Goudy, University of Edinburgh.

III.—WILLIAM DICKSON TRAVELLING FUND.

This fund is for the purpose of assisting Graduates of any Faculty of not more than three years' standing to travel for the purposes of study or research. For particulars, see page 228.

IV.—THE FORENSIC PRIZE.

This Prize was founded in 1858 by the Forensic Society with the view of encouraging the study of Law. It is of the value of £10, and is awarded annually in October to the Candidate who passes, either in July or October, with the greatest distinction in four of the subjects of the Law Graduation Examination. The Fund, amounting to about £280, is invested in the name of the Dean and Treasurer of the Faculty of Advocates and the Professors of Civil and Scots Law.

1886.	A. W. Donald, M.A.	1888.	A. M. Anderson, LL.B.
1887.	William Thomson, LL.B.	1889.	*William Hunter, LL.B.*

SCHOLARSHIPS, BURSARIES, AND PRIZES, &c., OPEN IN 1890-91.

I. Scholarships.

No. I. of the above Scholarships will be open for competition after the conclusion of the Graduation Examination in October 1891. The works on Political Economy recommended to Candidates are :—

Adam Smith's *Wealth of Nations.*
Sidgwick's *Principles of Political Economy.*
Bastable's *Theory of Foreign Trade.*
Nicholson's *Money and Monetary Problems.*
Cunningham's *Growth of English Industry and Commerce.*
List's *National System of Political Economy.*
Nicholl's *History of the English Poor Law;* and *History of the Scotch Poor Law.*
Rae's *Contemporary Socialism.*

Those on Mercantile Law :—

Bell's *Commentaries*, Book ii., part 3, chap. 2.
,, ,, Book iii., part 1, chap. 2, sec. 4.
,, ,, ,, ,, chap. 3, sec. 1.
Benjamin on Sales (3rd ed.).
Smith's *Mercantile Law* (10th ed.).
Chalmers's *Bills of Exchange* (3rd ed.)

No. III. of the above Scholarships will be offered for competition after the conclusion of the Graduation Examination in October 1890. The subjects of the Essays to be set for this Scholarship will be taken from the following branches of Law :—

(1.) "The Scottish Law of Succession."

(2.) "The Scottish Criminal Law."
(3.) "The System of Tenure and of Titles to Land in Scotland."

II. Bursaries Open for Competition in October 1890.

The Subjects of Examination for first year Bursaries are Latin and Moral Philosophy, and are the same as the October Examinations for M.A.

Two *Grierson Bursaries*, value £26, 13s. 4d. each, restricted in the first place to natives of the parishes of Crawford and Leadhills, and tenable for four years, whom failing they will be tenable for one year, one open to Students beginning their first Winter Session, and one to Students beginning their second Winter Session (see general rule as to application, *sup.*).

The *Cairns Bursary*, value £18, 19s. 6d., tenable for one year (see general rule, *sup.*).

The *Sibbald Bursaries* are also tenable by Students of the Faculty of Law entering the University for the first time; see Bursaries in Faculty of Arts.

A *Thomson Bursary*, of £25 a year, tenable for four years. Candidates must be Matriculated Students commencing their First Winter Session in the Faculty of Law, and must intimate their intention to compete to Messrs Traquair, Dickson, & Maclaren, W.S., 11 Hill Street, the Agents for Dr Thomson's Trustees, and also to the Clerk of the Senatus on or before 1st October. Candidates of the name of Thomson or Traquair, or natives of the town or county of Dumfries or the city of Edinburgh, are preferred.

III. University Prizes, &c., open 1890-91.

1. *The Forensic Prize* will be awarded in October 1890 to the Candidate who passes, either in July or in October, with the greatest distinction in four of the subjects of the Law Graduation Examination.

2. *The William Dickson Travelling Fund*, established for the purpose of assisting Graduates of any Faculty of not more than three years' standing to travel for the purpose of study or research. Applications must be lodged with the Secretary of Senatus on or before 15th March annually.

3. *The Lord Rector's Prize*, of twenty-five guineas, for the best Essay on "The effect on the History of Scotland, and on the character and Institutions of the Scottish nation, produced by other Countries, prior to the date of the Union with England." *See* Prizes in Faculty of Arts.

4, 5, 6. *The Trustees of Gray's Prize Essay Fund* offer three Prizes —one of £20 for the first, one of £10 for the second, and one of £5 for the third best Essay on "The British Constitution compared with Modern Republics." *See* Prizes in Faculty of Arts.

JOHN KIRKPATRICK, LL.D.,
Dean of the Faculty of Law.

IV.

FACULTY OF MEDICINE.

Dean.

PROFESSOR THOMAS RICHARD FRASER, M.D., F.R.S.,

University New Buildings.

Programme of Classes.

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FACULTY OF MEDICINE.

Dean—Professor THOMAS R. FRASER, M.D., F.R.S.

SUMMER SESSION, 1890.

The Classes will be opened as follows, and will meet daily (Saturdays excepted), unless otherwise stated.

Classes.	Days of Opening and Hours of Lectures.	Professors.	Class Fees.
Botany	1 May, 8 o'clock	Prof. Bayley Balfour,	£4 4[1]
Practical Botany	2 May, 9 & 2 „		2 2
Field Demonstrations on *Saturdays*.			
Medical Jurisprudence	1 May, 11 „	Prof. Sir Douglas Maclagan,	4 4
Public Health Laboratory Work	1 May, *daily*.		6 6
Natural History	1 May, 12 „	Prof. Ewart,	4 4
Elementary Pract. Zool.	2 May, 11 & 2 „		2 2[2]
Advanced Do.	1 May, 1 „		3 3[2]
Prac. Materia Medica (incl. Pharmacy)	1 May, 10 „	Prof. T. R. Fraser,	3 3
Chemistry (Organic), Advanced Class — (*Tues., Wed., & Thur.*)	1 May, 1 „	Prof. Crum Brown,	2 2
Do., Practical	1 May, 11 „		3 3
Anatom. Demonstra.	5 May, 11 „	Prof. Sir W. Turner and Demonstrators,	2 2
Practical Anatomy	1 May, *daily*.		
Clinical Surgery— (*Mon. & Thurs.*)	1 May, 12 „	Prof. Annandale,	3 3
Clinical Medicine— (*Tues. & Fri.*)	2 May, 12 to 2	Profs. Grainger Stewart, T. R. Fraser & Greenfield, and Prof. Simpson on Dis. of Women.	3 3
Clinical Instruction in the Royal Infirmary.	Daily at Noon	The Clinical Professors	Hospital Ticket.
Obstetrical and Gynecol. Operations— (*Tues. & Fri.*)	2 May, 10 o'clock	Prof. Simpson,	3 3

[1] Besides Garden Fee of 5s. [2] Besides charge of 10s. for Laboratory Expenses.

FACULTY OF MEDICINE—*continued.*

Classes.	Days of Opening and Hours of Lectures.	Professors.	Class Fees.
Practical Physiology, including Histology....	1 May, 3 o'clock	Prof. Rutherford,	£3 3
Operative Surgery and Surgical Appliances	1 May, 4 ,,	Prof. Chiene, ...	3 3
Practical Morbid Anatomy and Pathology	1 May, 11 ,,	Prof. Greenfield,...	3 3
		Lecturers.	
Mental Diseases, with Clinical Instruction at Morningside Asylum (*Mon. Wed. & Frid.*)	5 May, 3 o'clock	Thos. S. Clouston, M.D., ...	3 3[1]
Diseases of the Eye ...	6 May, 9 ,,	D. Argyll Robertson, M.D.,	3 3[1]
Clinical Instruction on Diseases of Children, at Royal Hospital for Sick Children.....	1 May, 11 ,,	James Carmichael, M.D., John Playfair, M.B.,.....	1 1[1]
Comparative Embryology, ...	5 May, 11 ,,	Mr George Brook,	2 2[1]

WINTER SESSION, 1890-91.

The Classes in the Faculty of Medicine will be opened on Tuesday, 14th October. They will meet daily (Saturdays excepted), unless otherwise stated.

Classes.	Days of Opening, and Hours of Lectures.	Professors.	Class Fees.
Practice of Physic ...	14 Oct., 9 o'cl.	Prof. G. Stewart,	£4 4
Chemistry	14 Oct., 10 ,,	Prof. Crum Brown	4 4
Practical Chemistry	1 Dec., 11 & 2 ,,		3 3
Surgery	14 Oct., 10 ,,	Prof. Chiene, ...	4 4
Institutes of Medicine	14 Oct., 11 ,,	Prof. Rutherford,	4 4
Practical Physiology	15 Oct., 9 ,,		3 3
Midwifery & Diseases of Women & Childr.	14 Oct., 11 ,,	Prof. Simpson, ...	4 4
Clinical Surgery—Royal Infirmary, *Mon. & Thurs.*	16 Oct., 12 ,,	Prof. Annandale,	4 4

[1] Five Shillings University Entrance Fee for Non-Matriculated Students.

FACULTY OF MEDICINE—*continued.*

Classes.	Days of Opening and Hours of Lectures.	Professors.	Class Fees.
Clinical Medicine—Royal Infirmary, *Tues. & Fri.* ...	14 Oct., 12-2 o'cl	Profs. G. Stewart, T. R. Fraser, and Greenfield, and Simpson on Diseases of Women,.....	£4 4
Clinical Instruction in the Royal Infirmary	Daily at Noon	The Clinical Professors.....	Hospital Ticket.
Anatomy	14 Oct., 1 o'cl.	Prof. Sir William Turner, ...	4 4
Practical Anatomy ...	1 Oct., *daily*		3 3
Anatom. Demonstr. ..	14 Oct., 4 o'cl.		2 2[1]
Materia Medica	14 Oct., 2 ,,	Prof. T. R. Fraser,	4 4
Pract. Mat. Medica, includ. Pharmacy	14 Oct., 10 ,,		3 3
General Pathology ...	14 Oct., 3 ,,	Prof. Greenfield,	4 4
Practical Pathology	14 Oct., *daily*		3 3
Natural History[3].....	14 Oct., 12 o'cl.	Prof. Ewart, ...	4 4
Elementary Practical Zoology.....	14 Oct., 1 ,,		2 2[2]
Advanced Practical Zoology.....	14 Oct., 1 ,,		3 3[2]
Med. Jurisprudence[3] [4]		Prof. Sir Douglas Maclagan, ...	4 4
Public Health Laboratory Work.....	1 Oct., *daily.*		10 10
Sanitary Engineering and Drawing	12 Nov., 10 ,,	Prof. Armstrong,	3 3
Botany[3]	6 Jan., 12 ,,	Prof. B. Balfour,.	4 4
Prac. Bot. Element.[3]	8 Jan.,		2 2
Do. do. Advanced[3]	22 Oct.,		3 3
Clinical Instruction on Diseases of Children	20 Oct., 11 o'cl	Lecturers. Jas. Carmichael, M.D., John Playfair, M.B.,	1 1[5]
Compar. Embryology	14 Oct., 3 ,,	Mr George Brook,	2 2[5]
Philos. of Nat. Hist.	Nov. ,,	G. J. Romanes, M.A., LL.D.,	

The Fee for a Second Course of any of the Lectures is £3, 3s.; any subsequent course is free. If a Perpetual Ticket is taken out at the beginning of the First Course, the Fee is £6, 6s.

[1] When taken along with Practical Anatomy, £1, 1s.
[2] Besides charge of 10s. for Laboratory Expenses.
[3] Three Months' Course.
[4] Lectures given in Summer Session.
[5] Five Shillings University Entrance Fee for Non-Matriculated Students.

MATRICULATION FEES.

For the Academical Year, 1st October to 1st October, .	£1	0	0
For the Summer Session only, 1st May to 1st October, .	0	10	0
University entrance fee in lieu of Matriculation for each of certain additional Courses (see Class Lists), . .	0	5	0

CLASS SESSIONS.

There are Two Sessions in each year, viz. :—

I. The Summer Session, which opens on the 1st of May and closes on the 18th of July 1890.

II. The Winter Session, which opens on the 14th of October 1890, and closes on the 20th March 1891. Practical Anatomy begins on the 1st of October 1890.

The Classes will meet for the last time before the Christmas Vacation on Friday, 19th December 1890, and will re-assemble on Tuesday, 6th January 1891.

ROYAL INFIRMARY.

Royal Infirmary at Noon, *Daily*.—Perpetual Ticket, in one payment, £12 ; Annual Ticket, £6, 6s.; Six Months, £4, 4s.; Three Months, £2, 2s. Separate payments, amounting to £12, 12s., entitle to a Perpetual Ticket.

LABORATORIES, &c.

The following means are afforded for PRACTICAL INSTRUCTION :—

ROYAL BOTANIC GARDEN and BOTANICAL MUSEUM AND LABORATORY.—These, as well as the Herbarium, with which is incorporated the Collection of dried plants belonging to the University, are used by University Students for the practical study of plants and for botanical research, and are open daily, under the superintendence of the Professor, assisted by J. M. Macfarlane, D.Sc., and others.

PHYSIOLOGICAL LABORATORY, for the prosecution of Physiological Research, and for the study of Practical Physiology, open daily, under the superintendence of the Professor and John Berry Haycraft, M.D., D.Sc., assisted by E. W. Carlier, M.B., B.Sc.

PRACTICE OF PHYSIC LABORATORY, for the study of Medicine, and for research in connection with the Practice of Physic, open daily, under the superintendence of the Professor, assisted by Robert A. Fleming, M.A., M.B., C.M.

DISSECTING ROOMS, open daily under the superintendence of Professor Sir William Turner, assisted by David Hepburn, M.B., C.M.; James Musgrove, M.D.; H. F. Waterhouse, M.D.; and other assistants.

The new CHEMICAL LABORATORIES (distinct from the Practical Chemistry Room), completed in 1885, contain accommodation for forty Students. The Laboratories are fitted with all necessary apparatus for chemical analysis and research, open daily, under the superintendence of the Professor, assisted by Dr Gibson.

OBSTETRICAL AND GYNECOLOGICAL LABORATORY, for research and study of practical work, under the superintendence of the Professor, assisted by John W. Ballantyne, M.D.

TUTORIAL CLASS OF CLINICAL MEDICINE, in the Wards of the Royal Infirmary, by J. Murdoch Brown, M.B., C.M., under the superintendence of the Clinical Professors.

NATURAL HISTORY LABORATORIES, for research and for study of the structure and development of Invertebrate and Vertebrate forms, open daily, under the superintendence of the Professor, assisted by George Carrington Purvis, M.D., C.M., B.Sc., and others.

MATERIA MEDICA LABORATORIES, for the study of Practical Materia Medica and Practical Pharmacy, and for Pharmacological and Pharmaceutical research, open daily, under the superintendence of the Professor, assisted by Joseph Tillie, M.D., and William C. Sillar, M.B., C.M., B.Sc.

TUTORIAL CLASS OF CLINICAL SURGERY AND SURGICAL PATHOLOGY, in the Infirmary, by Edward Carmichael, M.D., and the Resident Surgeons, under the superintendence of the Clinical Professor.

PUBLIC HEALTH LABORATORY, for Hygienic investigation, comprises three departments, viz.: a Chemical, a Bacteriological, and a Meteorological Department, open daily, under the superintendence of the Professor, assisted by Charles Hunter Stewart, M.B., C.M., B.Sc., and F. Maitland Gibson, B.Sc. Opens 1st October 1890.

SURGICAL LABORATORY, divided into two parts—(*a*) General Surgical Pathology, (*b*) Bacteriology,—is utilised for teaching Systematic Surgery, and every facility is afforded for investigation, under the superintendence of the Professor, assisted by Alex. Edington, M.B., C.M., and Harold J. Stiles, M.B., C.M.

PATHOLOGICAL LABORATORY, for the study of Pathological Anatomy and for Pathological Research, including Histological and Bacteriological Departments, under the superintendence of the Professor, assisted by W. H. Barrett, M.B., C.M., and Sydney Jamieson, M.B., C.M.

THE ROYAL EDINBURGH ASYLUM is open to members of the Class of Mental Diseases for Practical Instruction, under the superintendence of the chief Physician.

FEES FOR LABORATORY WORK.—In the Chemistry, Public Health, and Natural History Laboratories, the fees are £10, 10s. for the Winter Session, and £6, 6s. for the Summer Session.

MINIMUM CURRICULUM FOR DEGREES IN MEDICINE, WITH SUGGESTED ORDER OF STUDY AND EXAMINATION.

Whilst there is no authorised order of study, the usual Course is given below. The Preliminary Examination in General Education is to be taken in the month of March or of October, before entering the Classes in the Faculty of Medicine. Students are recommended to begin their Studies in the Summer Session.

It is to be observed that the Table gives only one Course of Instruction on each subject, that being all that is required by the Regulations. It does not include extra courses, nor courses on special subjects which Students may voluntarily attend. Those who can spare the time, are recommended to extend the course of study over five years.

FIRST SUMMER SESSION.
- Preliminary Examination (if not previously passed).
- Botany.
- Natural History.

FIRST WINTER SESSION.
- Anatomy.
- Practical Anatomy.
- Chemistry.
- Practical Chemistry.

SECOND SUMMER SESSION.
- Botany or Natural History (if not previously attended).
- Practical Chemistry (if not previously attended).
- Hospital. (Perpetual Ticket).

SECOND WINTER SESSION.
- Institutes of Medicine.
- Practical Physiology.
- Surgery.
- Hospital.

THIRD SUMMER SESSION.
- Practical Materia Medica, including Practical Pharmacy.
- Practical Physiology (if not previously attended).
- Practical Pathology.
- Hospital.

THIRD WINTER SESSION.
- Materia Medica.
- Pathology.
- Clinical Surgery (can only be taken by students who at the time have tickets for hospital attendance at the Royal Infirmary).
- Hospital.
- Examination in Anatomy, Physiology, Materia Medica, Pathology in April or July.

FOURTH SUMMER SESSION.
- Medical Jurisprudence.
- Out Door Dispensary.
- Hospital and Clinical Classes.

FOURTH WINTER SESSION.
- Practice of Medicine.
- Midwifery.
- Practical Midwifery.
- Clinical Medicine (can only be taken by students who at the time have tickets for hospital attendance at the Royal Infirmary).
- Vaccination.
- Out Door Dispensary.
- Hospital.

FIFTH SUMMER SESSION.
- Hospital.
- Final Examinations for M.B. and C.M.

Professorial Courses of Lectures, &c.

1890-1891.[1]

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I. ANATOMY.

PROFESSOR SIR WILLIAM TURNER.

Winter Courses.

1. LECTURES ON ANATOMY, at 1 P.M.—It is intended in this Course of Lectures to bring before the Student, in a systematic manner, the structure of the Human Body. The different systems and organs will be described, both in the more obvious arrangements and relations of parts which can be examined by the naked eye, and in their more minute or microscopic structure. The Course includes, therefore, both Textural or General Anatomy and Descriptive Anatomy. The Lectures are illustrated by recent dissections, by wet and dry preparations, by a large collection of Osteological specimens, and by drawings and diagrams. Structures too minute to be recognised by the naked eye are demonstrated under the Microscope.

To assist the Junior Members of the Lecture Class to acquire a knowledge of Osteology, Tutorial Demonstrations on the bones will be given during the earlier months of the Session without additional fee. All the members of this class have access to a systematically arranged series of osteological specimens and of models. Written examinations for both Junior and Senior Students are held periodically during the Session.

[1] Classes arranged as in the order of the departments enumerated in the Statutes relative to Degrees in Medicine.

Text-Books—The Professor's "Introduction to Human Anatomy," along with Gray's "Anatomy," or with Wilson's "Anatomy." Quain's "Elements of Anatomy." Holden's "Osteology."

2. ANATOMICAL DEMONSTRATIONS, at 4 P.M.—In this Course, which is conducted in the Theatre, the structure of the human body is displayed and demonstrated topographically, from the surface inwards. The Professor and the Demonstrator, David Hepburn, M.B., M.C., will jointly conduct the Course.

3. PRACTICAL ANATOMY, under the superintendence of the Professor, aided by the Demonstrators, David Hepburn, M.B., C.M., James Musgrove, M.D., H. F. Waterhouse, M.D., and by several other assistants. Examinations of both Junior and Senior Students on dissected parts are regularly conducted by the Demonstrators and the Professor. Special tutorial Demonstrations will also be given to the Senior Students on the joints, the brain, the organs of special sense, and other viscera.

This Course will commence on Wednesday, October 1st. The Dissecting-rooms are open from 9 A.M. to 5 P.M., and on Saturdays from 9 A.M. to noon. The Mackenzie Bursaries are awarded to members of this Class for proficiency in dissection.

Text-Books.—"Demonstrations of Anatomy," by Ellis, or Heath's "Practical Anatomy," or Holden's "Manual of the Dissection of the Human Body," or Cunningham's "Dissector's Guide."

Summer Courses.

1. PRACTICAL ANATOMY, as in Winter. The Course will commence on Thursday, 1st May. The Rooms are open from 9 A.M. to 5 P.M.; on Saturdays from 9 A.M. to noon. Examinations are regularly conducted on dissected parts by the Professor and by the Demonstrators, David Hepburn, M.B., C.M., James Musgrove, M.D., and Herbert F. Waterhouse, M.D., and the brain and organs of sense will be specially demonstrated.

2. ANATOMICAL DEMONSTRATIONS in the Theatre will commence on Monday, 5th May, and will be given partly by the Professor, and partly by the Demonstrator, David Hepburn, M.B. This Course is open, without additional Fee, to those engaged in Practical Anatomy during the Summer, and will consist of demonstrations on some special departments of Anatomy.

II. CHEMISTRY.

PROFESSOR CRUM BROWN.

1. LECTURES ON CHEMISTRY—

In the Lectures the general laws of chemical action are explained and illustrated.

The non-metallic elements and their compounds are described in detail. The metals and the different series of metallic salts are considered more generally, details being given in the case of the more important substances.

The principles upon which the classification of organic substances is based are explained, and the properties of the chief groups illustrated in detail.

Tutorial Classes, meeting once a week, are conducted by Dr Dobbin.

Text-Books.—Bloxam's "Chemistry, Inorganic and Organic," or Wurtz, "Elements of Modern Chemistry" by Greene.

A Class for Advanced Students is held in Summer. The subject for the Summer of 1890 will be Organic Chemistry.

2. LABORATORY.—The Laboratory is open for the reception of students who desire to study Analytical Chemistry, or to undertake chemical investigations. The instruction in the Laboratory is given by the Professor, assisted by Dr Gibson.[1] [For details in reference to the HOPE PRIZE, and Hope Prize Scholarship, which are attached to the Laboratory, and the ROBERT WILSON MEMORIAL PRIZE, which is attached to the

[1] As the accommodation is limited, Students intending to work in the Laboratory should make early application for places to prevent disappointment.

Class of Chemistry, see under *University Prizes and Scholarships.*]

A three months' Course of Practical Instruction is given in the Laboratory to enable Students of Medicine who wish to devote their attention to Public Health to take advantage of the special work of the Public Health Laboratory.

Attendance on this Course qualifies as "Practical Chemistry" for the First Professional Examination.

3. PRACTICAL CLASSES.—The work of these classes consists in the study of the reactions of the commoner salts.

III. MATERIA MEDICA AND THERAPEUTICS.

PROFESSOR THOMAS R. FRASER.

Materia Medica comprises the subjects of pharmacognosy, pharmacy, pharmacology, therapeutics, and dietetics; and the remedial applications of electricity and galvanism, heat and cold, &c. Instruction in Materia Medica is given in (A) a course of 100 Lectures during the Winter Session, and in (B) Practical Classes during the Summer Session, and of equivalent duration during the Winter Session.

A.—LECTURES ON MATERIA MEDICA AND THERAPEUTICS.—This course includes the following among other *Special Topics.*—1. The natural history, pharmacy, physiological action (or pharmacology), therapeutical uses, and modes of administering remedies, ordinarily so called. Such remedies consist of (*a*) mineral substances; (*b*) vegetable substances; (*c*) animal substances. 2. Food and drink, considered generally and in reference to disease. 3. Electricity and galvanism, with a description of the apparatus required for their application in disease. 4. Heat and cold. 5. Climate. In each course of Lectures the subjects included in 1 will be fully discussed, but a selection only will be made from the subjects included in 2, 3, 4, and 5, according to the time that may be left for their consideration.

B.—Practical Classes.—In these classes, *practical* instruction is given in the following subjects embraced in Materia Medica, but which cannot satisfactorily be taught in a course of lectures :—1. Pharmacognosy, or the recognition of drugs by their physical and chemical characters, and the detection of adulterations. 2. Pharmacy, or the processes for obtaining the pharmaceutical preparations of drugs. 3. Dispensing, or the making up of medicines in forms suitable for administration in disease.

It is recommended that the practical class be attended before, or simultaneously with, the course of lectures on Materia Medica and Therapeutics. Practical classes are taught during the Summer Session, when they meet daily at such hours as are found most convenient. A winter class will also be formed in October.

Pharmacological and Pharmaceutical Laboratories.

The above laboratories will be open daily to present and former Students of the class of Materia Medica for Pharmacological and Pharmaceutical Research, under the superintendence of the Professor and his Assistants.

IV. INSTITUTES OF MEDICINE OR PHYSIOLOGY.

PROFESSOR RUTHERFORD.

This Course, consisting of 100 Lectures, is held in the Winter. It includes—

1. An account of the Structure, Composition, and Functions of the Tissues of the Body.

2. An account of the Nutrition of the Body, including Circulation, Respiration, Alimentation, Nutrition of the Tissues, Excretion, together with the minute structure of the organs concerned.

3. An account of Animal Heat.

4. An account of Voice and Speech.

5. An account of the minute structure and physiology of the Sense organs, and the special physiology of the Nervous System.

6. Reproduction and Development.

There is a printed Syllabus with short notes of the Lectures.

Text-Book—Foster's Physiology or Landois' Physiology.

Practical Physiology.

This Course is divided into two sections—

1. *Practical Histology*, in which every Student prepares, examines, and preserves for himself most of the tissues and organs of the body. Each student is provided with a microscope, and all reagents.

2. *Practical Chemical Physiology*, in which every student performs the qualitative and quantitative analysis of the Urine in its normal and abnormal conditions, with special reference to clinical work, and such qualitative analyses of Blood, Bile, Milk, etc., as are possible in a class, together with experiments on Digestion.

This course is given, both in the Winter and Summer Sessions. In Winter, it begins early in November, and is held thrice a week. In Summer it begins early in May and is held daily. In each session the course consists of about Sixty Lessons.

Practical Physiology, Advanced Course.

This is a Laboratory Course for Advanced Students, and consists chiefly of Experimental Physiology, in so far as it does not imply any painful experiments on living animals; advanced subjects in Histology and Chemistry. The Course is held in the Winter Session.

Physiological Research.

The Physiological Laboratory is open daily for the prosecution of private Physiological Research.

V. PRACTICE OF PHYSIC.

Professor Grainger Stewart.

This Course comprises—

I. An account of the nature, and more particularly of the

clinical characteristics, and the treatment of the different types of morbid action.

II. An account of the morbid anatomy, clinical history, causes, diagnosis, prognosis, and treatment of the diseases of the different systems and organs.

It is intended that each course shall be, as far as possible, complete; but that, while the general principles (included in Part I.) shall be fully discussed each session, the diseases of individual systems (included in Part II.,) shall be taken up in different order year by year, and certain systems selected for more minute consideration.

The course is illustrated by specimens from the Anatomical Museum of the University, and from the Professor's private collection, as well as by numerous drawings, diagrams, and charts.

Tutorial Class.

Practical instruction in Laryngoscopic and Ophthalmoscopic Examination is given to the members of the Class by the Assistant.

Text-Books.—Fagge's "Practice of Medicine," Bristowe's "Practice of Medicine," Bartholow's "Practice of Medicine," or Roberts on the "Practice of Medicine." Students are also advised to consult the Professor's "Introduction to the Study of Nervous Diseases," and Dr Graham Brown's "Medical Diagnosis."

VI. SURGERY.

PROFESSOR CHIENE.

Winter Session.

1. *Lectures*, 10 A.M. This course of lectures is devoted to a systematic consideration of the Principles and Practice of Surgery. It is intended that each course shall embrace, as far as possible, a complete view of the present aspects of the Science and Practice of Surgery.

Written examinations are held at stated periods, and at the

end of the Session a practical examination is held on the work of the Tutorial Classes.

2. *Tutorial Instruction*, at hours most convenient for the students, includes—

(*a.*) *Practical Instruction* in *Bandaging* and the *Treatment* of *Fractures* and *Dislocations* on the living subject. This class is divided into sections for Senior and Junior Students. The class for Senior Students is conducted by David Wallace, M.B.; the Class for Junior Students by Harold J. Stiles, M.B.

(*b.*) Demonstrations of Surgical Instruments and Appliances.

(*c.*) Weekly Demonstrations on the Surgery of the Eye and Ear and on Surgical Pathology, illustrated by museum, specimens by David Wallace, M.B.

(*d.*) Weekly Revisal of the Lectures, together with Demonstrations of the Preparations in the Surgical Museum illustrative of the Lectures on Surgery by Harold J. Stiles, M.B.

(*e.*) Demonstrations on the principles of Antiseptic Surgery by Alexander Edington, M.B.

Summer Session.

The Summer Session is devoted to a consideration of Practical Aspects of Surgery. Special attention is given to Surgical Anatomy and Operative Surgery. The class meets daily during the months of May and June. During July the class is divided into sections for practical work. Oral examinations and tutorial instruction in the Treatment of Fractures and Dislocations, and in the uses of surgical instruments, form a special part of the course. Special demonstrations are given on Surgical Pathology.

The Surgical Laboratory is open daily during the Winter and Summer Sessions for original work. It is divided into two departments,—1st, Surgical Pathology, under Harold J. Stiles, M.B.; 2d, Bacteriology, under Alexander Edington, M.B. Applications to be made to the Professor.

Text-Books—Winter Session.—The Professor's "Lectures on the First Principles of Surgery." Erichsen's "Science and Art of Surgery," 9th edition, by Marcus Beck. *Summer Session.*—The Professor's "Lectures on Surgical Anatomy."

VII. MIDWIFERY AND THE DISEASES OF WOMEN AND CHILDREN.

PROFESSOR SIMPSON.

The Course of Instruction comprises Lectures on—

I. The Anatomy and Physiology of the Female Organs of Reproduction.

II. The Physiology, Pathology, and Therapeutics of Pregnancy.

III. Parturition—Natural (Eutocia), and Morbid (Dystocia).

IV. The Hygiene, Pathology, and Therapeutics of the Puerperal State.

V. The Hygiene, Pathology, and Therapeutics of Infancy and Childhood.

VI. The Special Pathology and Therapeutics of the Female Organs of Reproduction.

One day in each week is devoted to the Gynecological Section of the Course; and the Diseases of Women may be studied clinically in the Royal Infirmary, in the Buchanan Medical Ward, in connection with the class of Clinical Medicine.

Midwifery may be studied clinically in the Royal Maternity, of which the Professor is, *ex officio*, one of the Medical Officers, and where he is in attendance during the first three months of the Winter Session. The Professor makes a special Clinical visit with the Members of the Class, who have taken the Maternity Ticket, on Saturdays, at the usual Lecture hour—11 a.m.; and one of the Assistant Physicians gives Clinical Instruction on Mondays and Thursdays, in the afternoon.

After the Class-roll is made up, Tutorial classes are formed for Practical Instruction in the use of Obstetric and Gynecological Instruments and Appliances.

Medals and Certificates of Merit are awarded for answers at three Written Examinations held during the Session.

Summer Session.

A Course of Lectures on Obstetric and Gynecological Opera-

tions, with Demonstrations of the use of Instruments and Appliances, is conducted during the Summer Session at 10 A.M.

On Tuesdays and Fridays the Professor gives Lectures and Demonstrations. On the other days of the week the sections of the class are trained in the investigation and treatment of Female Diseases, and the members of the class have an opportunity of practising operations on the recent subject, and on lay figures.

Text-Books.—Playfair's or Lusk's "Midwifery." The Professor's "Contributions to Obstetrics and Gynecology." Hart and Barbour's "Manual of Gynecology."

Scholarships in Midwifery and Gynecology.

The Buchanan Scholarship in Gynecology, and the James Scott Scholarship in Midwifery, are open to members of the class. For conditions, *see* "Scholarships in Medicine."

VIII. GENERAL PATHOLOGY, INCLUDING MORBID ANATOMY.

PROFESSOR GREENFIELD.

This Course embraces—

1. Etiology—the causes of disease.

2. Morbid Anatomy and Histology—the structural changes, and Pathological Chemistry—the changes in composition, which occur in disease. (Malformations will be included under Morbid Anatomy.)

3. Pathological Physiology—the alterations of function in disease; including Symptomatology—the general signs and symptoms of disease.

These different departments will be treated in the order considered most convenient, and always with reference to general laws or principles. Greater extension will be given to No. 2, Morbid Anatomy, General and Special, being made the basis of Pathological instruction.

Part of the Course will consist of the demonstration of recent morbid specimens, the minute structures being displayed under the microscope. Preserved specimens as well as a selection from the morbid preparations in the University Anatomical Museum, will be exhibited and explained. The Lectures will be illustrated by plates, diagrams, &c.

Practical Pathology.

Classes for Practical Instruction in Morbid Anatomy and Pathological Histology are conducted in the Pathological Laboratory—microscopes and other necessary apparatus being supplied. The Course consists of—1st. Naked Eye Demonstration; 2d. Histological investigation and preparation of Morbid Structures and Organs.

For the Winter Course, the class meets three times a week, from the beginning of November till the end of March. For the Summer Course, five times a week, from the beginning of May till the end of July.

The Laboratory is also open daily from 10 A.M. till 4 P.M. for Pathological Research, under the direction of the Professor and his Assistants.

IX. CLINICAL MEDICINE.

PROFESSORS GRAINGER STEWART, T. R. FRASER, AND GREENFIELD, WITH PROFESSOR SIMPSON FOR DISEASES OF WOMEN.

The course of Clinical Medicine, consisting of Clinical Lectures and Instruction in the University wards of the Royal Infirmary, is conducted conjointly by the Clinical Professors—all the Professors being on duty during both the Winter and Summer Sessions, the Professor of Midwifery giving lectures and demonstrations on Gynecological Medicine on certain days, both during Summer and Winter.

The Course consists of:—1. Practical Instruction on three days

a week at the bedside. 2. Critical Expositions and Discussions of illustrative, important, or difficult cases in the lecture-room on two days a week.

Every facility is afforded to members of the Class to act as Clinical Clerks, and those are preferred who have already had a course of tutorial instruction. At the close of each Summer Session, six gentlemen, who have at some time been members of the Class, are appointed to be Resident Physicians in the Clinical Wards during the following Winter and Summer Sessions.

For notice of the Wightman Prize, see "University Prizes."

Clinical Tutorial Class.

Practical instruction in the Methods of Physical Examination is given to the members of the Class by the University Clinical Tutor.

Junior Students are strongly advised to take this course of instruction along with their first course of Clinical Medicine.

X. CLINICAL SURGERY.

PROFESSOR ANNANDALE.

The objects of this Course are to teach the symptoms, diagnosis, and treatment of Surgical diseases and injuries as met with in the living body, and to point out modifications and complications which occur in connection with them. With these views patients are brought before the class in the special University Clinical Theatre of the Infirmary, and their conditions are carefully examined and discussed, due regard being taken to avoid anything likely to injure their feelings or in any way aggravate their disease. The history and nature of the case having been studied, the proper treatment is suggested and described, and is then either carried out at once or on the first convenient occasion. In addition to the regular lectures operations are performed in the Clinical Theatre, practical demonstrations are given in the wards of the Infirmary, and upon one day

in the week the cases of patients attending the out-patient department are made a special consideration, so as to instruct the students in connection with the minor and more common surgical affections. Practical instruction as to the examination of patients, the observation of symptoms, the treatment of surgical emergencies, the use of instruments, the application of dressings, and other surgical details is given by the Clinical Tutor attached to the Chair, in small classes, which are free to all Students attending the Course.

Text-Books.—Spence, Erichsen, Holmes, Bryant, or other recent works on Surgery. Students are also advised to study some of the best works (old and new) on the special subjects of Practical Surgery.

XI. MEDICAL JURISPRUDENCE.

PROFESSOR SIR DOUGLAS MACLAGAN.

Part I.—Medical Jurisprudence.

MEDICAL EVIDENCE GENERALLY.

1. Documentary.
2. Oral.
3. Experimental—

   Examination of the living; identity; Examination of the dead identity; cause of death; exhumations, autopsies.

MEDICAL EVIDENCE SPECIALLY.

Questions affecting Health or Life.

1. Assaults and Homicide—

   Wounds and other external injuries; asphyxia. Starvation. Heat and cold. Poisons.

2. Suicide.
3. Offences against Chastity—

   Rape, &c.; concealment of pregnancy; criminal abortion; infanticide.

4. Malpraxis and Neglect of Duty.

Questions affecting Civil Rights or Social States.

Marriage and Divorce. Impotence and sterility. Live birth; Survivorship. Insanity. Feigned diseases.

Part II.—Medical Police. Public Health.

HYGIENE OF INDIVIDUALS.

Man—

Age and development. Sex. Constitution.

External Agencies—

Food and Drink. Air. Clothing. Ablutions. Exercise.

Habits and Modes of Life—

Temperance. Celibacy and Marriage. Professions: learned, mechanical, criminal. Punishments. Prostitution.

Duration and Expectancy of Life—

Life Assurance.

HYGIENE OF COMMUNITIES.

Sanitary Administration.

Climate—

Causing disease; remedying disease.

Towns, Camps, and Private Habitations—

Topographical position; water supply; heating and lighting; ventilation; drainage and sewerage.

Public Buildings—

Schools; churches; hospitals; theatres; prisons.

Cemeteries. Quarantine Establishments. Epidemics; Endemics. Disinfectants.

Text-Books.—Taylor's "Medical Jurisprudence," Guy's "Principles of Forensic Medicine," Parkes' "Practical Hygiene," Wilson's "Handbook of Hygiene," Louis Parkes' "Hygiene," Galton's "Healthy Dwellings," Smith's "Laws Concerning Public Health," Vesey Fitzgerald's "Epitome

of the Laws affecting Health," Newsholme's "Vital Statistics," Dykes' and Stuart's "Manual of Public Health Acts."

Public Health Laboratory.

The Laboratory comprises three Departments, the Chemical Laboratory, the Bacteriological Laboratory, and a station in the Infirmary grounds, the use of which has been granted by the Managers to Professor Sir D. Maclagan for making meteorological observations, and the examination of emanations from the soil in reference to Public Health.

The Laboratories will be open daily during the Winter and Summer Sessions, from 10 to 4, under the superintendence of the Professor and Charles Hunter Stewart, M.B., B.Sc.

The work in these Laboratories will constitute an advanced course of instruction in the Methods of Hygienic investigation, and is intended for those who may desire to prepare themselves for taking the Degrees of Science in Public Health, or for the duties of Medical Officer of Health.

The Fees are £10, 10s. for the Winter, and £6, 6s. for the Summer Session.

XII.—BOTANY.

PROFESSOR BAYLEY BALFOUR.

Summer Session.

I. LECTURES.—The course is a general one—Morphological, Physiological, and Systematic—illustrated by diagrams, models, and fresh specimens, and by demonstrations of microscopic specimens. Lectures are given every Monday, Tuesday, Wednesday, Thursday, and Friday. In addition, lectures on special parts of the subject are given at intervals during the Session.

II. PRACTICAL CLASS.—In this class opportunity is given for the examination of microscopic structure of plants, and for the study of life-histories of plants illustrating the lectures. They are conducted by the Professor, assisted by J. M. Macfarlane, D.Sc., and others.

III. EXCURSIONS.—Excursions are made on Saturdays for the practical study of plants in the fields.

Winter Session.

I. LECTURES.—A three months' course of lectures similar to that of the Summer Session is given.

II. PRACTICAL CLASS. — A class similar to that of the Summer Session is conducted by the Professor and Assistants.

The Royal Botanic Garden, with the Botanical Museum and Herbarium, are open daily for the examination of living as well as preserved specimens of plants.

The Botanical Laboratory in the Royal Botanic Garden is open daily to those who desire to study Botany practically, and to engage in botanical research.

XIII.—NATURAL HISTORY.

PROFESSOR EWART.

Summer Session.

I. LECTURES ON ZOOLOGY.

The first part of the course will be devoted to the consideration of one of the higher vertebrates. The rest of the course, while dealing generally with the organization, phylogeny, habits, and distribution of animals, will be chiefly devoted to giving an account of the anatomy and development of a few typical invertebrate and vertebrate forms.

The Students have access to the Natural History collection in the Museum of Science and Art, and the lectures are illustrated by specimens from that collection, and from the Museum of the University.

II. ELEMENTARY PRACTICAL ZOOLOGY.

Each member of this class will examine for himself a series of invertebrate and vertebrate forms, including Paramœcium, Vorticella, Hydra, Earthworm, Leech, Nephrops, Mussel, and Snail; the Skate, Cod, Frog, and Pigeon.

In addition to the Laboratory work, there will be frequent demonstrations in the Natural History Class-Room, having special reference to the subjects prescribed for the First Professional and Science Examinations.

III. ADVANCED PRACTICAL ZOOLOGY.

The members of this class during the summer will devote their time to studying the anatomy, histology, &c., of Pecten, Buccinum, Aplysia, Sepia, Ascidia, Amphioxus, Lacerta, Testudo, and other forms, and to learning the more recent methods in use for determining the structure and development of the organs and tissues of animal forms.

Winter Session.

In addition to a qualifying course of lectures similar to the Summer course, and to Elementary and Advanced Practical Classes, there will be special courses of lectures, the subjects and hours of which will be afterwards announced. The Winter advanced practical work will be confined to the examination of types of the more important invertebrate groups, with the exception of the mollusca.

Each student will, in addition, have an opportunity of becoming practically acquainted with the more recent methods employed in conducting researches as to the minute structure and development of invertebrate forms.

LECTURES ON MENTAL DISEASES.

LECTURER—THOMAS S. CLOUSTON, M.D.

This course consists of—

1. Systematic Lectures in the University during the Summer Session on the Classification, Symptoms, Causes, and Treatment of Mental Diseases.

2. Demonstrations, naked eye and microscopic, in the University and at the Royal Asylum, Morningside, of the Morbid Anatomy of Insanity. These are supplemented by drawings.

Students will have an opportunity of original investigation in the Pathological Museum of the Asylum.

3. Clinical instruction at the Royal Asylum, Morningside (West House), in all the forms of Mental Disease. Students have the opportunity of personally coming in contact with and examining the cases, so as to learn the modes of managing and dealing with patients labouring under Mental Disease, and they are exercised in the diagnosis of Insanity and the drawing up of certificates; the aim being to enable them to recognise its early stages, to distinguish its varieties, to adopt suitable treatment, and to advise the relatives as to the question of sending the patient to an asylum or not. There is a clinical field of 500 beds, comprising all the wards except those for private patients. This part of the course extends through the Summer and the last month of the Winter Session.

4. A few lectures on the medico-legal, hereditary, educational, and social relations of Mental Disease, and on its bearings and significance in ordinary medical practice.

There are Free Clinical Clerkships, tenable for three months, in the Royal Edinburgh Asylum, and in several other Asylums, in connection with the class.

Text-Book.—Dr Clouston's "Clinical Lectures on Mental Diseases."

LECTURES ON DISEASES OF THE EYE.

LECTURER—D. ARGYLL ROBERTSON, M.D.

The course will consist—

1. Of systematic lectures delivered daily at 9 A.M. for eight weeks during the Summer Session, at which the symptoms, diagnosis, and treatment of the more important diseased conditions of the eye and its appendages will be discussed. The lectures will be illustrated by drawings, diagrams, &c.

2. Of clinical instruction daily at the Ophthalmic wards of the Royal Infirmary, where opportunities will be afforded for practising the use of the ophthalmoscope.

Text-Books.—Swanzy's "Handbook on Diseases of the Eye," Lawson on "Diseases and Injuries of the Eye," or Nettleship on "Diseases of the Eye."

Works of reference.—Berry's "Treatise on Diseases of the Eye." Meyer's "Practical Treatise on Diseases of the Eye," translated by Fergus. Juler's "Ophthalmic Science and Practice." Landolt on the "Refraction and Accommodation of the Eye," translated by Culver. Gowers' "Medical Ophthalmoscopy."

CLINICAL INSTRUCTION ON DISEASE IN CHILDREN.

LECTURERS—JAMES CARMICHAEL, M.D., JOHN PLAYFAIR, M.B.

Two Courses, each of three months' duration, will be conducted annually, one during the Winter Session, and one during the Summer Session.

Each Course will include Clinical Instruction in the wards of the Royal Hospital for Sick Children, and in the University Clinical Medicine Theatre of the Royal Infirmary.

For the ward visits, the class will be divided into sections not exceeding thirty in number, and each section will attend the ward visits on at least one day of each week. The whole class will meet once in each week in the Lecture Theatre for clinica instruction.

LECTURES ON COMPARATIVE EMBRYOLOGY.

LECTURER—MR GEORGE BROOK.

Summer Session.

The Summer Course will be devoted to a study of Vertebrate Embryology.

The Lectures will deal chiefly with the development of the Chick and the Mammalia, but will include an outline of Comparative Vertebrate Organogeny.

Practical Work.—Each member of the Class will prepare for himself a full series of sections of Chick Embryos in various stages of development, and will receive instruction in the necessary methods of research. A number of demonstrations will be given in connection with the Course.

Winter Session.

The Winter Course will form an introduction to the study of Embryology, and, besides the general principles of development, will include an outline of the special development of the following amongst other groups (as illustrated by types):—Cœlenterata, Mollusca, Chætopoda, Crustacea, Echinodermata, Cephalochordata, Hemichordata, Urochordata, Elasmobranchii, Teleostei, Cyclostomata and Amphibia. One meeting a week will be devoted to the preparation of microscopic specimens in illustration of the Course.

Works of reference.—Foster and Balfour's "Elements of Embryology," 2nd Ed. Balfour's "Comparative Embryology." Haddon's "Introduction to the Study of Embryology."

ROSEBERY LECTURES ON THE PHILOSOPHY OF NATURAL HISTORY.

LECTURER—G. J. ROMANES, M.A., LL.D., F.R.S.

The Course is to consist of thirty-one lectures extending over five years. Seven lectures were given in November 1886, six in December 1887, six in December 1888, six in December 1889, and six will be given in 1890.

Subject, 1890.—Post-Darwinian Theories.

Graduation in Medicine and Surgery.

Three Degrees in Medicine and Surgery are conferred by the University of Edinburgh, viz., Bachelor of Medicine (M.B.), Master in Surgery (C.M.), and Doctor of Medicine (M.D.) The Degree of Master in Surgery is not conferred on any person who does not at the same time obtain the Degree of Bachelor of Medicine.

These Degrees admit to the General Council of the University, and to the Medical Register. They qualify for Practice throughout Her Majesty's dominions, and for admission to the Military, Naval, and other Public Medical Services in the United Kingdom.

All Candidates for these Degrees must give evidence of having obtained a satisfactory General Education.

Statutes of the University relative to the Preliminary Examination in General Education.

I. The preliminary branches of extra-professional education are English, Latin, Arithmetic, the Elements of Mathematics, and the Elements of Mechanics; and the proficiency of Students in these branches is ascertained by examination, prior to the commencement of their medical study (pp. 362 and 363).

II. No candidate is admitted to a professional examination who has not passed a satisfactory examination on at least two of the following subjects (in addition to the subjects mentioned above):—Greek, French, German, Higher Mathematics, Natural Philosophy, Logic, Moral Philosophy; and the examination on these latter subjects also takes place before the candidate has entered on his Medical Curriculum (p. 364; for the additional subjects required for the Degree of M.D., see pp. 360 and 364).

III. A Degree in Arts (not being an Honorary Degree) in any one of the Universities of England, Scotland, or Ireland, or in any Colonial or Foreign University, specially recognised for this purpose by the University Court, exempts from all preliminary examination; and an Examination in Arts by any corporate body, whose examination has been recognised as qualifying for

entrance on medical study by resolution of the General Medical Council of the United Kingdom, provided the said examination by the said corporate body shall be also approved by the University Court, shall exempt, *pro tanto*, from preliminary examination in Arts, on the subjects comprised in the said examination of the said corporate body. (See pp. 366, 367.)

STATUTES OF THE UNIVERSITY RELATIVE TO PROFESSIONAL EDUCATION AND EXAMINATION.

IV. No one is admitted to the DEGREES of BACHELOR of MEDICINE and MASTER in SURGERY who has not been engaged in Medical and Surgical study for four years—the Medical Session of each year, or *Annus Medicus*, being constituted by at least two courses of not less than one hundred lectures each, or by one such course, and two courses of not less than fifty lectures each; with the exception of the Clinical Courses, in which lectures are to be given at least twice a week during the prescribed periods.

V. Every candidate for the Degrees of M.B. and C.M. must give sufficient evidence by certificates—[1]

1. That he has studied each of the following departments of Medical Science, viz.,

ANATOMY, ...	During Courses including not less than One Hundred Lectures.
CHEMISTRY, ...	
MATERIA MEDICA, ...	
INSTITUTES OF MEDICINE OR PHYSIOLOGY,	
PRACTICE OF MEDICINE, . . .	
SURGERY, ...	
MIDWIFERY, and the DISEASES peculiar to WOMEN and CHILDREN; two Courses of Midwifery, of Three Months each, being reckoned equivalent to a Six Months' Course, provided different departments of Obstetric Medicine be taught in each of the Courses, . .	
GENERAL PATHOLOGY, or in Schools where there is no such Course, a Three Months' Course of Lectures on Morbid Anatomy, together with a Supplemental Course of Practice of Medicine or Clinical Medicine,	

[1] No Course of Lectures will be allowed to qualify unless the Lecturer certifies that it has embraced at least 100 lectures or 50 lectures, in conformity with the requirements of this section. Three Months' courses on Materia Medica, Pathology, and Midwifery do not qualify.

Practical Anatomy, .	A Course of the same duration as those of not less than One Hundred Lectures above prescribed.[1]
Practical Chemistry, .	Three Months.
Clinical Medicine, .	During a Course of Six Months, or Two Courses of Three Months; Lectures being given at least twice a week.
Clinical Surgery,[2] .	
Medical Jurisprudence, . .	During Courses including not less than Fifty Lectures.
Botany, ...	
Natural History, including Zoology,	

2. That he has attended for at least two years the Medical and Surgical Practice of a General Hospital which accommodates not fewer than eighty patients, and possesses a distinct staff of Physicians and Surgeons.

3. That he has attended during a Course of not less than fifty hours' instruction the Class of Practical Materia Medica and Pharmacy in the University of Edinburgh, or a similar class conducted in a University or recognised School of Medicine, or a similar Class conducted at the Laboratory of an Hospital or Dispensary, or elsewhere, by a Teacher recognised by the University Court under Section VI. Subsection (4); or, that he has been engaged by apprenticeship,[3] for not less than two years, with a Registered Medical Practitioner, or a Member of the Pharmaceutical Society of Great Britain, or a Member of the Pharmaceutical Society of Ireland, or a Pharmaceutical Chemist, or Chemist and Druggist, registered under the provisions of the "Act for regulating the qualifications of Pharmaceutical Chemists, 1852," "The Pharmacy Act, 1868," or "The Pharmacy Act (Ireland), 1875," in the *bona fide* compounding and dispensing of Drugs, and the preparation of their officinal and other Preparations under his superintendence.

4. That he has attended, for at least six months, by apprenticeship or otherwise, the *out-practice* of an Hospital, or the practice of a Dispensary, Physician, Surgeon, or Member of the London or Dublin Society of Apothecaries.[3]

5. That he has attended at least twelve cases of labour under the superintendence of a registered Medical Practitioner; or that he has attended six such cases, and also has attended for at least three

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[1] Certificates of attendance on Practical Anatomy must express not only the number of months engaged in dissection, but the names of the parts dissected, and the degree of care with which the dissections have been made. Students are recommended not to appear for examination in Anatomy until they have dissected the human body at least once.

[2] The Faculty of Medicine recommend that Medical Students do not attend Clinical Surgery during their first six months' attendance on Clinical Medicine.

[3] Apprenticeship, Dispensary or Hospital Practice, Practical Midwifery, and Vaccination are not reckoned as *Classes* in making up an *Annus Medicus*.—See Regulation as to Vaccination at p. 372.

months the practice of a Midwifery Hospital in which practical instruction is regularly given.[1]

6. That he has attended, during courses of not less than fifty hours' instruction, Classes of Practical Physiology and Practical Pathology in the University of Edinburgh, or in a University or School of Medicine recognised by Subsections (2) and (4) of Section VI. of Ordinance No. 8, Edinburgh No. 3, or upon Classes thereof, conducted by a Teacher recognised by the University Court under the said Subsection (4).

VI. The studies of candidates for the Degrees of Bachelor of Medicine and Master in Surgery are subject to the following Regulations:—

1. One of the four years of Medical and Surgical study, required by Section IV., must be in the University of Edinburgh.

2. Another of such four years of Medical and Surgical study must be either in the University of Edinburgh, or in some other University entitled to give the Degree of Doctor of Medicine.

3. Attendance during at least six winter months on the Medical or Surgical Practice of a General Hospital, which accommodates at least eighty patients, and, during the same period, on a course of Practical Anatomy, may be reckoned as one of such four years, and to that extent shall be held equivalent to one year's attendance on Courses of Lectures as above prescribed.

4. One year's attendance on the Lectures of Teachers of Medicine in the Hospital Schools of London (including the Professors in the Faculty of Science, in subjects required for graduation, in King's College and University College, London), or in the School of the College of Surgeons in Dublin, or of such Teachers of Medicine in Edinburgh, or elsewhere, as shall from time to time be recognised by the University Court,[2] may be reckoned as one of such four years, and to that extent shall be held as attendance on Courses of Lectures as above prescribed.

5. Candidates may, to the extent of Four of the Departments of Medical Study required by Section V., Subsection 1, attend in such year or years of their Medical and Surgical studies, as may be most convenient to them, the Lectures of the Teachers of Medicine specified in the foregoing Subsection 4.

[Thus, Students of Medicine in the London Schools and in the School of the College of Surgeons in Dublin can obtain there two *Anni Medici* out of the four required for the Edinburgh Degrees in Medicine. Courses of Lectures in these Schools, and the Courses of the Medical Teachers and of the Science Teachers in King's College and in University College, London, in the Subjects of Graduation, are regarded as

[1] See Footnote 3, p. 355.
[2] See pp. 375-378.

equivalent to Lectures on the corresponding subjects in this University, except Materia Medica and Midwifery, which, when only three months' Courses, are not received as equivalent. One *Annus Medicus* may be constituted by attendance on Practical Anatomy and Hospital Practice during the Winter Session. Another *Annus Medicus* by attending either, (*a*), full Winter Courses on any two of the following subjects: Anatomy, Physiology, Chemistry, Pathology, Surgery, Medicine, Clinical Surgery, Clinical Medicine; or (*b*), on one such Course and two three months' Courses on any of the following subjects: Botany, Practical Chemistry, Natural History, Medical Jurisprudence. If the Student selects the arrangement prescribed in (*a*), attendance on a third Course, although unnecessary to constitute an *Annus*, will also be accepted. The other subjects, and the additional Courses, not given in London or Dublin, necessary for the degrees of the University, require to be attended at this University.

In Provincial Schools, where there are no Lecturers recognised by the University Court, a Candidate can have only One *Annus Medicus*, and this is constituted by attendance on a Qualified Hospital along with a course of Practical Anatomy, but in a Provincial School where there are two or more Lecturers recognised by this University, a Second *Annus Medicus* may be made by attendance on at least two six months', or one six months' and two three months', recognised Courses.

6. All candidates not Students of the University, availing themselves of the permission to attend the Lectures of Extra-Academical Teachers in Edinburgh, must, at the commencement of each year of such attendance, enrol their names in a book to be kept by the University for that purpose, paying a Fee of the same amount as the Matriculation Fee paid by Students of the University, and having, in respect of such payment, a right to the use of the Library of the University.

7. The Fee for attendance on the Lectures of an Extra-Academical Teacher in Edinburgh, with a view to Graduation, must be of the same amount as that exigible by Medical Professors in the University.

[*The Fee must be paid at the commencement of the Course.*]

8. No Teacher is recognised who is at the same time a Teacher of more than one of the prescribed branches of study, except in those cases where Professors in the University are at liberty to teach two branches.

9. It is not necessary for any Teacher, attendance on whose Lectures was recognised before 1861 for the purposes of Graduation in the University, to obtain a new recognition from the University Court; and attendance on the Lectures of every such Teacher will continue to be recognised as heretofore.

10. It is in the power of the University Court, if they shall see cause, at any time to withdraw or suspend the recognition of any Teacher or Teachers.

VII. Every Candidate must deliver, before the 31st day of March of the year in which he proposes to Graduate, to the Dean of the Faculty of Medicine—

1. A declaration, in his own handwriting, that he has completed his twenty-first year, [or that he will have completed it on or before the day of Graduation,] and that he will not be, on the day of Graduation, under articles of apprenticeship to any Surgeon or other master. (This declaration, along with a statement of studies, is appended to the Schedule for the Final Examination, and must be signed before the Schedule is given in.)

2. A statement of his studies, as well in Literature and Philosophy as in Medicine, accompanied with proper certificates.

VIII. Each candidate is examined, both in writing and *viva voce—Firstly*, on Chemistry, Botany, and Natural History; *Secondly*, on Anatomy, Institutes of Medicine, Materia Medica, [including Practical Pharmacy and Prescribing], and Pathology; *Thirdly*, on Surgery, Practice of Medicine, Midwifery, and Medical Jurisprudence; *Fourthly*, Clinically on Medicine and on Surgery in an Hospital. The examinations on Anatomy, Chemistry, Institutes of Medicine, Botany, Natural History [Materia Medica and Pathology] are conducted, as far as possible, by demonstrations of objects placed before the candidates.

IX. Students who profess themselves ready to submit to an examination in the first division of these subjects may be admitted to examination therein at the first period of examination after they have completed their attendance on the necessary classes: provided always that it shall be lawful for students to proceed to examination in the said subjects under one or more of the following subdivisions, namely—(*a*) Botany and Natural History, (*b*) Chemistry (including Practical Chemistry), (*c*) Botany and Chemistry (including Practical Chemistry), or (*d*) Natural History and Chemistry (including Practical Chemistry), at the first period of examination after they have completed attendance on the relative classes; and to proceed to examination in the remaining subject or subjects at a subsequent period of examination.

X. Students who have passed their examination on the first

division of these subjects, may be admitted to examination on the second division at the end of their third year.

XI. The examination on the third and fourth divisions cannot take place until the candidate has completed his fourth *Annus Medicus.*

XII. Candidates may, if they choose, be admitted to examination on the first two of these divisions at the end of their third year, or to the four examinations at the end of their fourth year.

[Thus, Candidates for the First Professional Examination, after they have completed attendance on the necessary Classes, may appear for Examination in all the subjects, or they may appear for Examination in one or more of the separate sub-divisions mentioned in Section IX. ; for the Second Professional Examination attendance for three complete *Anni Medici* is required ; and for the Final Professional Examination, four complete *Anni Medici* are required. Qualifying courses must have been attended on all the subjects of each division or sub-division of Examination previously to the Candidate being admitted to examination in that division.]

XIII. If any candidate at these examinations be found unqualified, he cannot be again admitted to examination unless he has studied, during another year, two of the prescribed subjects, either in the University, or in some other School of Medicine.

XIV. After the candidate has satisfied the Medical Examiners, the Dean will lay the proceedings before the Senatus Academicus, by whose authority the candidate will be admitted on the first day of August, or, if that day be Sunday, then on the following day, to the Degrees of Bachelor of Medicine and of Master in Surgery.

XV. The Senatus Academicus, on the day here appointed, will assemble at ten o'clock A.M., for the purpose of conferring Degrees ; and no candidate, unless a sufficient reason be assigned, shall absent himself, on pain of being refused his Degree for that year.

XVI. Candidates for Graduation are required to produce evi-

dence of their having conformed to the Regulations which were in force at the time they commenced their Medical Studies.

XVII. The Degree of DOCTOR OF MEDICINE may be conferred on any candidate who has obtained the Degrees of Bachelor of Medicine and Master in Surgery, and is of the age of twenty-four years, and produced a certificate of having been engaged subsequently to his having received the Degrees of Bachelor of Medicine and Master in Surgery, for at least two years in attendance on an Hospital, or in the Military or Naval Medical Services, or in Medical and Surgical Practice:

Provided always that the Degree of Doctor of Medicine shall not be conferred on any person, unless he be a Graduate in Arts of one of the Universities of England, Scotland, or Ireland, or of such other Universities as are above specified [Section III.], or unless he shall, before or at the time of his obtaining the Degrees of Bachelor of Medicine and Master in Surgery, or thereafter, have passed a satisfactory examination on *three* of the subjects mentioned in Section II. of the Statutes relative to Preliminary Examination. Two of these must be Greek, and either Logic or Moral Philosophy, and the third must be one of the following subjects at the option of the Candidate—namely, French, German, Higher Mathematics, and Natural Philosophy.

And provided also that the candidate for the Degree of Doctor of Medicine shall submit to the Faculty of Medicine a Thesis, certified by him to have been composed by himself, and which shall be approved by the Faculty, on any branch of knowledge comprised in the professional examinations for the Degrees of Bachelor of Medicine and Master in Surgery, which he may have made a subject of study after having received those Degrees. The Candidate must lodge his Thesis with the Dean on or before 30th April of the year in which he proposes to graduate. No Thesis will be approved by the Medical Faculty which does not contain either the results of original observations in practical Medicine, Surgery, Midwifery, or in some of the sciences embraced in the curriculum for the Bachelor's and Master's Degrees; or else a full digest and critical exposition of the

opinions and researches of others on the subject selected by the Candidate, accompanied by precise references to the publications quoted, so that due verification may be facilitated.[1]

Candidates, settled for a period of years in foreign parts, who have complied with all the regulations for the Degree of M.D., (under the new Statutes), but who cannot appear personally to receive the Degree, may, on satisfying the Senatus to that effect, by production of sufficient official testimonials, have the Degree conferred on them in absence.

XVIII. The Medical Examiners for all candidates for Graduation in Medicine are the Professors in the Faculty of Medicine, along with the thirteen non-professorial Examiners appointed annually by the University Court.

XIX. The provisions of these Statutes came into operation on the 4th of February 1861.

XX. Persons who began their medical studies before the 4th of February 1861, are entitled to graduate under the system in force before or after that date, according as they may comply with the regulations in force in the University before or after that date.

PRELIMINARY EXAMINATION IN GENERAL EDUCATION.

The Preliminary Examinations in General Education are held in the Examination Hall in the University.[2]

All Candidates are required to enter their names *in full* in a book, kept for the purpose at the Office of the Faculty of Medicine, University New Buildings, and at the same time to mention the subject or subjects in which they offer themselves

[1] Candidates are required to write their Theses on faint lined paper, 11 in. by 8½ in. with margins 1½ in. at each side. The Thesis is to be written on one side of each leaf only.

[2] A Local Centre has been established at the University College of North Wales, Bangor, where examinations in the Preliminary Subjects will be held on the same days and hours as in Edinburgh. An additional fee of 5s. is payable by each Student undergoing examination at Bangor. This fee admits to examination in March and October in any one year, and is payable to the Registrar at Bangor on or before 1st October or 23rd February for the examinations in October and March respectively.

for Examination. They are also required to state whether they have before appeared for any Preliminary Examinations at this University.

Students Matriculated for the academic year in which the Examinations take place (*1st October to 1st October*), and who have entered their names at the time required by the Regulations, will be admitted to the Examination without payment of the special fee, but they are required to present their Matriculation Tickets at the entrance to the Examination Hall. Matriculation for 1890-91 will begin on 1st October, and Candidates may Matriculate up to the date of Examination, provided they have entered their names for the Examination at the time stated. Non-Matriculated Students pay a Fee of Ten Shillings each, and are admitted on showing their Receipts at the entrance to the Examination Hall. Those who pay the Fee in March will be admitted to the Examination in October without farther payment, on showing their tickets of admission. Payment in October does not exempt from payment in March. See dates of entering for the Examinations (pp. 373 and 374).

Any Candidate who cannot appear personally at the time fixed to enter his name and pay the fee, can, on application to the Clerk at the Faculty of Medicine Office, University New Buildings, obtain a schedule, which he should fill up, and, in the case of no fee being payable, return to him. When a fee is payable, the schedule should be transmitted to the *Clerk to the University*, along with a *crossed Post Office Order* or *Postal Order* for the Fee.

I. In conformity with Section I. of the Statutes (see p. 353) examinations on the Preliminary Branches of Extra-Professional Education will take place on Tuesday, Wednesday, Thursday, and Friday, the 7th, 8th, 9th, and 10th October 1890; and on Tuesday, Wednesday, Thursday, and Friday, the 3rd, 4th, 5th, and 6th March 1891.

Examination on Tuesdays.—Arithmetic, 9 to 11 A.M.; Mathematics (Geometry, Algebra), 11.30 A.M. to 1.30 P.M.; Higher Mathematics, 2 to 4 P.M.

Examination on Wednesdays.—English, 9 to 11 A.M.; Natural Philosophy, 11.30 A.M. to 1.30 P.M.; Mechanics, 2 to 4 P.M.

Examination on Thursdays.—Latin, 9 to 11 A.M.; Logic, 11.30 A.M. to 1.30 P.M.; Moral Philosophy, 2 to 4 P.M.

Examination on Fridays.—Greek, 9 to 11 A.M.; French, 11.30 A.M. to 1.30 P.M.; German, 2 to 4 P.M.

SUBJECTS OF EXAMINATION FROM OCTOBER 1890 TO MARCH 1892, INCLUSIVELY.

1. *English.*—The Examination will include:—(1.) Writing a passage of English from dictation; (2.) English Composition, with the correction of sentences of bad English; (3.) Questions in English Grammar, with analysis of sentences and the derivation and definition of some common English words, special regard being had to discrimination of synonyms (Davidson's "*English Words Explained*" recommended); (4.) Questions in Geography and History, especially in the Geography and History of the British Islands and India, and the History of English Literature. Exceptionally bad answers to the History and Geography Questions may cause the rejection of a Candidate in English. Candidates who have passed a qualifying Examination either in English (including Grammar, &c.) only, or in History and Geography only, will be allowed to take *separately* the portions in which they have not qualified, provided they give their paper to the Examiner at the end of half of the prescribed time.
2. *Latin.*—For October 1890, Livy, Book XXII. For March 1891, Virgil, *Eclogues*. For October 1891 and March 1892, Cicero, *De Amicitia*. An easy passage from a Latin prose author not prescribed, and a single passage of English (translated from a Latin author) to be re-translated into Latin—the more difficult Latin words being given.
3. *Arithmetic.*—The Common Rules, including Vulgar and Decimal Fractions.
4. *Elements of Mathematics.*—Geometry, Euclid, Books I., II., and III., or Wilson's *Elementary Geometry*, Books I., II., III., or Books I., II., III. of the Text Book issued by the Association for the Improvement of Geometrical Teaching (Parts I. and II.). The Elementary Rules of Algebra, including Simple Equations. A knowledge of Geometry alone or of Algebra alone will not be sufficient. Candidates who have passed a qualifying Examination in Geometry only, or in Algebra only, will be allowed to take *separately* the subject in which they

have not qualified, provided they give their paper to the Examiner at the end of half the prescribed time.

5. *Elements of Dynamics* (*Mechanics*).—Elementary Kinematics, Statics, including the Simple Machines, Kinetics, and Hydrostatics. Text Book: Blaikie's *Elements of Dynamics* (excluding the appendix).

II. In conformity with Section II. of the said Statutes (see p. 353), which enacts that no candidate shall be admitted to a professional examination who has not passed a satisfactory examination on at least *two* optional subjects (in addition to the subjects mentioned above), examinations will also take place on the following subjects:—

1. *Greek.*—For October 1890, Xenophon, *Cyropaedia*, Book II. For March 1891, Plato, *Crito*. For October 1891 and March 1892, Xenophon, *Memorabilia*, Book II. Some easy sentences of English will be set to be translated into Greek.
2. *French.*—For October 1890 to March 1892 inclusively, E. de Bonnechose, *Lazare Hoche*. An easy passage in English will be given for translation into French.
3. *German.*—For October 1890 to March 1891 inclusively, Hachette's Reader, "Lust und Lehre," Part I. An easy passage in English will be given for translation into German.
4. *Higher Mathematics.*—Geometry, Euclid, Books I.–IV., Book VI., and the Propositions of Book XI., usually given in the modern editions, or Wilson's *Elementary Geometry*, Books I., II., III., V., and Wilson's *Solid Geometry and Conic Sections*, Book IV., Section I.—Algebra, Elementary Trigonometry, and Conic Sections. Text Book for Conic Sections, Wilson's *Solid Geometry and Conic Sections*, Book V. The use of the above text books is not imperative; they are cited merely to indicate the scope of the examination.
5. *Natural Philosophy.* — Text-Book recommended — Balfour Stewart's *Elementary Physics*.
6. *Logic.*—For October 1890 and March 1891. *Either* Fowler's *Deductive Logic*, *Intro.*, Parts I., II. (chap. i.-iv. and vii., viii.), III. (chap. i., ii., iii., and viii.), and *Inductive Logic*, chap. i., ii. (§§ 1 and 2), iii., iv.; *or* Professor Campbel. Fraser's *Selections from Berkeley*, Editor's "Introduction" and "Dialogue on Visual Language," along with the Prefatory Note, pp. 147-153 (3rd edition). For October 1891 and March 1892. *Either* Fowler's *Deductive Logic*, "Introduction," Parts I., II. (chap. i.-iv. and vii., viii.), III. (chap. i., ii., iii., and viii.), Davidson's *Logic of Definition* (chap. i., ii., iii.), and Fowler's *Inductive Logic*, chap. i., ii. (§§ 2 and 3), iii.,

iv.; *or* Professor Campbell Fraser's *Selections from Berkeley*, Editor's "General Introduction," Author's "Introduction to *the Principles of Human Knowledge*," and "Dialogue on Visual Language," along with the Prefatory Note, pp. 147-153 (3rd edition).

7. *Moral Philosophy.*—For October 1890 to March 1891, (1.) Sidgwick's *History of Ethics*, chap. iv., §§ 1-16, inclusively; (2.) Professor Calderwood's *Handbook of Moral Philosophy*, Psychology of Ethics, Parts I. and III. For October 1891 and March 1892, (1.) Bain's *Mental and Moral Science*, Book III. ("*The Emotions*"), chap. i., iv., v., vii., viii.; (2.) Professor Calderwood's *Handbook of Moral Philosophy*, "Introduction," "Psychology of Ethics," Parts I. (chap. i.-vi.), and IV., together with "Sketch of the History of Moral Philosophy," Socrates to Kant.

In answering the questions in Arithmetic, Mathematics, and Dynamics (Mechanics), the steps of the reasoning, as well as the final result, must be exhibited.

A Degree in Arts in any one of the Universities of the United Kingdom, or in one of the Colonial Universities, or Universities of British India, exempts from the Preliminary Examination.

The Preliminary Examinations in General Education of the following Bodies are recognised *pro tanto;* that is to say, they exempt from examination on the subjects comprised in them, in so far as the examinations are of the same extent as those required by this University. Any subjects required by the Regulations, and not included in these examinations, or not carried out to the requisite extent, must be passed at the University.

As regards Latin, Greek, French, and German, mere translation is not sufficient. There must be translation of an English passage into each of the languages taken up by the Candidates.

Mathematics must in all cases be equivalent in Geometry to at least the first three Books of Euclid.

As regards Optional Subjects, each of them must be certified; and in so far as they are of the nature and extent required by the University, they will be allowed to qualify.

No Examination of any other Board will be received on any subjects in which Candidates have been remitted at this University.

In all cases Candidates must produce Certificates of having passed such Examinations, with an official notice of the subjects *in which they have passed, and of the* extent *of the Examination in each subject.*

In all cases where the Certificates have been granted on the aggregate of the marks obtained by the Candidates the Official Certificate of the percentages in each subject must be produced.

UNIVERSITIES WHOSE DEGREES IN ARTS EXEMPT FROM THE PRELIMINARY EXAMINATION, AND UNIVERSITIES AND OTHER BODIES WHOSE EXAMINATIONS IN GENERAL EDUCATION ARE RECOGNISED *pro tanto*.

UNIVERSITIES OF THE UNITED KINGDOM.

OXFORD.—Examination for a Degree in Arts; Responsions; Moderations; Local Examinations (Senior), Certificate to include Latin, and Mathematics,—Oxford and Cambridge Schools' Examination.

CAMBRIDGE.—Examination for a Degree in Arts; Previous Examination; Local Examinations (Senior), Certificate to include Latin, and Mathematics,—Oxford and Cambridge Schools' Examination.

DURHAM.—Examination for a Degree in Arts; Registration Examination for Medical Students; Local Examinations (Senior), Certificate to include Latin and Mathematics.

LONDON.—Examination for a Degree in Arts or Science; Matriculation Examination.

EDINBURGH, GLASGOW, ABERDEEN, AND ST ANDREWS.—Examination for a Degree in Arts; Preliminary Examination for Graduation in Medicine and Surgery; Examination of Candidates for Senior Local Examinations Certificates and Senior and Junior of Edinburgh.

DUBLIN.—Examination for a Degree in Arts; Public Entrance Examination.

ROYAL UNIVERSITY OF IRELAND.—Examination for a Degree in Arts; Entrance Examinations; Examination for Diploma of Licentiate in Arts; Previous Examination for B.A. Degree.

VICTORIA UNIVERSITY.—Examination for a Degree in Arts; the Preliminary Examination (to include Latin and Mechanics); the Entrance Examination in Arts.

OTHER BODIES NAMED IN SCHEDULE (A) TO THE MEDICAL ACT.

THE SOCIETY OF APOTHECARIES OF LONDON.—Examination in Arts.

ROYAL COLLEGE OF PHYSICIANS (EDINBURGH), and ROYAL COLLEGE OF SURGEONS (EDINBURGH).—Preliminary Examination in General Education, conducted by a Board appointed by these Colleges combined.

FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—Preliminary Examination in General Education.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—Preliminary Examination, Certificate to include Mathematics.

APOTHECARIES' HALL OF IRELAND.—Preliminary Examination in General Education.

THE EXAMINATIONS FOR COMMISSIONS AND APPOINTMENTS IN THE NAVAL, MILITARY, AND CIVIL SERVICES IN THE UNITED KINGDOM.—Certificate to include all the Subjects required by the General Medical Council.

ROYAL COLLEGE OF PRECEPTORS.—Examination for a First-class Certificate only.—Exemption from further examination will be granted only in those subjects in which the Candidate is certified to have gained at least 40 per cent. of the attainable marks.

Leaving Certificates of the Scottish Education Department.

INDIAN, COLONIAL, AND FOREIGN UNIVERSITIES AND COLLEGES.

UNIVERSITY OF (1) CALCUTTA, (2) MADRAS, and (3) BOMBAY.—Entrance Examination, Certificate to include Latin.

M'GILL UNIVERSITY, and Matriculation Examination, BISHOP'S COLLEGE, MONTREAL.—UNIVERSITIES OF (1) TORONTO, (2) TRINITY COLLEGE, TORONTO, (3) QUEEN'S COLLEGE, KINGSTON, (4) VICTORIA COLLEGE, UPPER CANADA, (5) FREDERICTON, NEW BRUNSWICK, (6) MANITOBA.—Previous Examination.

MOUNT ALLISON COLLEGE, SACKVILLE, NEW BRUNSWICK.—Degrees in Arts.

UNIVERSITY OF HALIFAX.—Matriculation Examination.

UNIVERSITY OF KING'S COLLEGE, NOVA SCOTIA.—Matriculation Examination; Responsions.

UNIVERSITY OF MELBOURNE.—Matriculation Examination, Certificate to include all the Subjects required by the General Medical Council.

UNIVERSITY OF SYDNEY.—Matriculation Examination. Examination after one year's study in Arts.

UNIVERSITY OF THE CAPE OF GOOD HOPE. — Matriculation Examination.

UNIVERSITY OF ADELAIDE.—Matriculation Examination.

SOUTH AUSTRALIA, SOUTH AUSTRALIAN INSTITUTE, ADELAIDE.—Preliminary General Examination, First-Class Certificate.

CODRINGTON COLLEGE (BARBADOS).—(1) English Certificate for Students of two years' standing, specifying the Subjects of Examination; (2) Latin Certificate, or "Testamur."

TASMANIAN COUNCIL OF EDUCATION.—Examination for the Degree of Associate of Arts, Certificate to include Latin and Mathematics.

UNIVERSITY OF NEW ZEALAND.—Matriculation Examination.

OTAGO UNIVERSITY.—Preliminary Examination.

CHRIST'S COLLEGE, CANTERBURY, NEW ZEALAND. — Voluntary Examinations, Certificate to include all the subjects required by the General Medical Council.

GERMANY. — Gymnasial Abiturienten - Examen, and corresponding Entrance Examination to other Continental Universities.

RUSSIA. — Examination for Certificates of Maturity, granted before entrance to the Universities.

REGISTRATION OF STUDENTS OF MEDICINE.

According to the Regulations of the General Medical Council of the United Kingdom, every Student must, at the commencement of his medical studies, have his name placed on the Register of Students kept by the General Medical Council. No Student can be registered who has not passed an Examination recognised by the General Medical Council in English, Latin, Arithmetic, Euclid and Algebra, and Elements of Mechanics, along with one optional subject, as French, or German, or Greek, or Italian, or any other modern language, or Logic, or Botany, or Zoology, or Elementary Chemistry. The commencement of study in Medicine is reckoned from the date of registration, and Students are recommended to register with the Branch Registrar for Scotland (Mr James Robertson, 1 George Square, Edinburgh) as soon as they have passed in the required subjects and entered upon the Study of Medicine. Forms for Registration may be had on application at the Office of the Faculty of Medicine, University New Buildings. The Preliminary Examinations recognised by the General Medical Council are only recognised by this University *pro tanto*. For Subjects and extent of Examination required by this University, see pp. 353, and 363-365.

A Student who has not been able to register, and who begins his Studies in Medicine in Summer, may matriculate, and attend the classes of Botany and Natural History. He must, however, pass a sufficient preliminary examination in October, so as to entitle him to be registered at the beginning of the Winter Session.

No one can be placed on the Register as a practitioner who has not been a registered Student for at least forty-five months.

MATRICULATION, &c., OF STUDENTS.

All Students are required to take their tickets for each course of Lectures, which they propose to attend, not later than fifteen days after the commencement of the course, and they must matriculate before they can be enrolled in any of the Classes in the University. Matriculation consists in paying during each year of study an entrance fee of £1 to the University, and in inscribing the name in the Students' Album. The matriculation fee for a Summer Session is 10s.

All Candidates for Degrees, not Students of the University, availing themselves of the permission to attend the Classes of Extra-Academical Teachers in Edinburgh, must conform to Ordinance vi. 6, pp. 356, 357.

Every Candidate for Degrees in Medicine and Surgery must matriculate at the University for the year in which he appears for Professional Examination or for Graduation. He should intimate his intention to graduate, and pay the Fee of £1 for Registration as a member of the University General Council (if not already a member) at least ten days before the date of Graduation.

REGULATIONS AS TO CLASS EXAMINATIONS.

With a view to promote the Educational interests of the students during the time they are occupied with the respective subjects in the Classes, the Senatus recommend :—

1. That there should be at least two Special Class-Examinations in the Classes in the Faculty of Medicine during each Session, conducted by means of questions and written answers, without aid from books or notes.

2. That in the event of a student gaining 75 per cent. or more of the available marks in any department, he shall obtain a Certificate in the First Class of Honours.

3. That in the event of a student gaining 50 per cent. or more, but less than 75 per cent., of the available marks in any department, he shall receive a Certificate in the Second Class of Honours.

University Bronze Medals are also given for Competitive Class Examinations.

CERTIFICATES OF ATTENDANCE ON CLASSES IN THE FACULTY OF MEDICINE.

The Senatus Academicus have resolved that the Certificates of Attendance to be granted to students in the Faculty of Medicine shall be regulated in the following manner :—

Each Professor shall ascertain the presence of his pupils at least twenty-six times in a course of six months' duration, and thirteen times in a course of three months' duration.

Those who have been absent twelve or more times in a six months' course, or six or more times in a three months' course, shall not be entitled to any Certificate.

The following is the form of Certificate which must be adopted in all cases :—

"I certify that Mr attended my Course of Lectures on during the Session ; that attendance was ascertained times, and that Mr was present on of these occasions."

Exceptions will be admitted in the case of those who may be absent from sickness or other unavoidable causes, the particulars of which must be stated to the Professor in writing, accompanied with certificates. All excuses for non-attendance must be given in immediately upon the student returning to his class. But if any student shall have been absent for six weeks or upwards, in a Course of six months, or for three weeks in a Course of three months (whatever the cause of absence may be), his

case must be transmitted to the Dean of the Faculty for the decision of the Faculty.

Whenever the student's cause for absence shall be admitted by the Professor or by the Faculty, the Certificate shall bear that he "attended," and shall state the amount of the irregularity and the nature of the excuse.

FIRST PROFESSIONAL EXAMINATION.

The Faculty of Medicine have resolved that the written and oral examinations on Chemistry, Botany, and Natural History shall be restricted in the following manner :—

1. *Chemistry.*—Classification of Elements. General Laws of Chemical Combination and Action, as illustrated in the simpler compounds of the more commonly occurring elements.

Symbolic Notation.

Preparation and Properties of the Non-Metallic Elements and their chief Compounds.

Classification and General Properties of Acids, Bases, and Salts—Electrolysis of Salts.

Oxygen, Ozone, Oxidation, and Reduction.

Hydrogen, Water, Peroxide of Hydrogen, Chlorine, Hydrochloric Acid, Hypochlorites, Chlorates, Perchlorates, Bromine, Hydrobromic Acid, Bromates, Iodine, Hydriodic Acid, Iodates, Periodates, Fluorine, Hydrofluoric Acid. Sulphur, Sulphuretted Hydrogen, Oxides of Sulphur, Sulphites, Sulphates, Thiosulphates, Chlorides of Sulphur, Chloride of Sulphuryl, Nitrogen, The Atmosphere, Oxides of Nitrogen, Nitrates, Nitrites, Ammonia, Ammonia Salts, Phosphorus, Oxides of Phosphorus, Chlorides and Oxychloride of Phosphorus, Phosphates, Phosphites, Hypophosphites, Boron, Boracic Acid, Borates, Fluoride of Boron, Silicon, Silica, Silicates, Chloride of Silicon, Fluoride of Silicon, Hydrofluosilicic Acid.

Carbon, Oxides of Carbon, Carbonates, Phosgene. Classification of Carbon Compounds. Marsh Gas and its Homologues. Chloroform. Methylic and Ethylic Alcohols and Ethers. Methylamine, Dimethylamine, Trimethylamine, Tetramethylammonium. Formic and Acetic Acids, Aldehyde, Acetone, Chloral, Olefiant Gas, Glycol, Oxalic Acid, Lactic Acid. Tartaric Acid, Citric Acid. Fats and Oils, Saponification, Glycerine. Cellulose, Sugars, Starch. Products of Distillation of Wood and of Coal. Coal-Gas, Coal-Tar. Turpentine, Camphor. Benzene, Benzoic Acid, Salicylic Acid, Oil of Bitter Almonds. Hydrocyanic Acid, Cyanides, Cyanates, Thiocyanates, Urea.

The following metals, their Oxides, Sulphides, and more important Salts. Potassium, Sodium, Magnesium, Calcium, Strontium, Barium, Aluminium, Zinc, Cadmium, Manganese, Chromium, Iron, Nickel,

Cobalt, Bismuth, Lead, Copper, Mercury, Silver, Tin, Gold, Platinum, Antimony, Arsenic.

Simple Qualitative Analysis. [*The Examination in Analysis is conducted practically.*]

2. *Botany.*—The characteristic features of the following groups and classes of the vegetable kingdom :—

Thallophyta [Schizophyta, Algæ, Fungi]; Muscineæ [Hepaticæ, Musci]; Pteridophyta [Filicineæ, Equisetineæ, Lycopodineæ]; Phanerogamæ [Gymnospermæ, Angiospermæ (Monocotyledones, Dicotyledones)].

The fundamental facts of Morphology (including Anatomy, Histology, and Development) and Physiology as they are illustrated in the life-history of the following plants :—Bacterium, Saccharomyces, Mucor, Vaucheria, Eurotium, Funaria, Aspidium, Pinus, Scilla, Helianthus, Ulmus.

At the oral examination Candidates may also be questioned regarding, and required to demonstrate, the characters of plants belonging to the following natural orders of Phanerogamæ :—Coniferæ, Gramineæ, Orchideæ, Liliaceæ, Urticaceæ, Labiatæ, Compositæ, Umbelliferæ, Rosaceæ, Leguminosæ, Cruciferæ, Ranunculaceæ.

3. *Natural History.*—(*a.*) The Principles of Classification.

(*b.*) The distinctive characters of the more important Groups of the Invertebrata, together with a knowledge of the general structure of the following forms :—Hydra, Lumbricus, Hirudo, Anodon, Helix, and Nephrops, and of the appendages of Scorpio and Periplaneta.

(*c.*) The distinctive characters of the Chordata groups.

(*d.*) A general knowledge of the orders included in the groups Pisces and Mammalia.

(*e.*) A general knowledge of the following animals, viz. :—Phallusia, Amphioxus, Myxine, Raia, and Gadus; Rana, Columba, Ornithorhynchus, Macropus, Lepus, Ovis, and Canis; and of the skeleton of Crocodilus, Equus, Felis, Balæna, Vespertilio, and Troglodytes gorilla.

(*f.*) The maturation, segmentation, etc., of holoblastic and meroblastic ova, the formation of the embryonic layers; the more important facts concerning the development of Hydra, Amphioxus, Scyllium, and *Rana*, and the origin of the fœtal appendages of Lepus.

(*g.*) The principles of Geographical Distribution of Animals, and a general knowledge of the Distribution of the Mammalia.

HONOURS AT PROFESSIONAL EXAMINATIONS.

Candidates who have displayed special merit at any of the Professional Examinations will be announced as having passed that Examination "with distinction."

Candidates who have displayed special merit at each of the three

Professional Examinations will be announced, at the time of the Graduation, as having obtained FIRST or SECOND CLASS HONOURS, according to the merit that has been displayed.

REGULATION AS TO VACCINATION.

In conformity with the desire expressed by the Local Government Board, it has been resolved that a Candidate for a Degree in Medicine must produce, at his final examination, a certificate from a Vaccine Department in an Hospital, Dispensary, or other public Institution recognised by the Local Government Board for instruction in Vaccination, to the effect that he has himself performed the operation successfully under the teacher's inspection; that he is familiar with the different stages of the vaccine vesicle, and with the method of preserving lymph, and is thoroughly informed in every necessary part of the subject.

Recognised Vaccine Departments in Edinburgh are—in the Royal Public Dispensary, 21 West Richmond Street—*Vaccinator*, Dr Husband; in the Western Dispensary, 90 Fountainbridge—*Vaccinator*, Dr J. B. Buist.

SPONSIO ACADEMICA TO BE SIGNED BY GRADUATES IN MEDICINE.

Ego Doctoratus in Arte Medica titulo jam donandus, sancte coram Deo cordium scrutatore, spondeo, me in omni grati animi officio erga Universitatem Academicam Edinburgensem ad extremum vitæ halitum perseveraturum.

Tum porro Artem Medicam caute, caste, probeque exercitaturum, et quoad potero, omnia ad ægrotorum corporum salutem conducentia cum fide procuraturum. Quæ, denique, inter medendum visa vel audita sileri conveniat, non sine gravi causa vulgaturum.

Ita præsens spondenti adsit Numen.

FEES FOR DEGREES, &c.

Examination in Botany, Chemistry, Chemical Testing, and Natural History,	£5	5	0
Examination in Anatomy, Institutes of Medicine, Materia Medica, Prescriptions, Pathology,	5	5	0
Final Examination in Surgery, Midwifery, Practice of Physic, Medical Jurisprudence, Clinical Medicine (with Prescriptions), Clinical Surgery, during last Summer Session,	10	10	0
Fee for Registration as a Member of the University General Council,	1	0	0
Total Fees for M.B. and C.M. Diplomas,	£22	0	0

Additional Fee for M.D. Diploma, ...	£5	5	0
Government Stamp-Duty (for M.D. only), . . .	10	0	0
Matriculation Fee, ...	1	0	0
Registration Fee (University General Council), . .	1	0	0
Total Fees for M.D. Diploma, ...	£17	5	0

In the event of the Candidate failing to pass any one of the Professional Examinations, the Fee is not returned; but he may appear at one subsequent examination without paying an extra Fee, and at any future examination on paying a Fee of £2, 12s. 6d.

Note.—Total Fees and Stamp for graduating as M.D. only, for Candidates who commenced their Medical Education before February 1861, £25.

N.B.—The above Fees include all charges for the Diplomas, and Graduates are requested to apply personally for their Diplomas at the Matriculation Office between 12 and 4 on the day of graduation. Any Graduate who cannot appear personally is required to give written authority to some person to receive and give a receipt for his Diploma.

DATES OF EXAMINATIONS, FOR PRESENTING CERTIFICATES, AND PAYING FEES FOR DEGREES,[1] &c.

The dates of the Examinations for 1890-91 have been fixed as follows, and Candidates are required to assemble in the Examination Hall at the University a quarter of an hour before the time fixed for examination.

Candidates are required to present their Certificates for Examinations at the Office of the Faculty of Medicine, University New Buildings, and to pay the fees at the Matriculation Office. No fees will be received until the Candidates have shown all the Certificates required to be produced for the Examinations for which they propose to appear.

Candidates for Degrees in Medicine and Surgery, in lodging the statement of their Courses of Study with the Dean of the Faculty, will observe that for all Courses of Lectures the Faculty will receive Certificates only as evidence of their attendance.

Preliminary Examination in General Education.

7th, 8th, 9th, and 10th October 1890; 3rd, 4th, 5th, and 6th March 1891. Hours at pages 362 and 363.

Names to be given in and Fees paid on or before 1st October 1890, and on or before 23rd February 1891.

[1] When names are not entered nor fees paid on or before the stated dates, a late entry fee of ten shillings must be paid before the Candidate can be admitted to examination. A Candidate is not held to be entered for the Examination until his Name is entered, all the necessary Certificates, &c., lodged, and the Fee paid.

First Professional Examination.

Written Examination—21st and 22nd July 1890; 23rd and 24th March 1891. At 11 o'clock each day.

Practical Chemistry—23rd July 1890, and following days; and 25th March 1891, and following days. At hours to be announced.

Names to be given in, Certificates shown, and Fees paid on or before 7th July 1890, and on or before 9th March 1891.[1]

Second Professional Examination.

Written Examination—11th and 12th July 1890; 30th and 31st March 1891. At 10 o'clock each day.

Names to be given in, Certificates shown, and Fees paid on or before 4th July 1890, and on before 20th March 1891.[1]

Final Professional Examination.

Clinical Examinations in Surgery begin on 1st May, and in Medicine on 2nd May 1890.

Written Examination—16th and 17th June 1890. At 10 o'clock each day.

Oral Examination commences 18th June.

Names to be given in, Certificates shown, and Fees paid for the Examination in 1890 on or before 22nd April 1890,[1] and for the Examination in 1891 on or before 21st April.

Graduation.

Friday, 1st August 1890, at 10 A.M. Candidates to assemble at 9 A.M.

Theses for M.D. to be given in and Fees paid on or before 30th April 1891, and Stamp Duty to be paid on or before 15th July.[1]

Information relative to Matriculation and the Curriculum of Study, and the Subjects of Examinations for Degrees in Medicine and Surgery, and for Fellowships, Scholarships, Bursaries, Prizes, &c., &c., may be obtained on application to the Dean of the Faculty of Medicine, University New Buildings.

The fees for Matriculation, for Examinations for Degrees, and for Registration as members of the General Council of the University, are payable at the *Matriculation Office*, *University* (*Old*) *Buildings*. When Candidates cannot attend personally to pay the fees, they should transmit them to the *Clerk of the University* by *crossed Post Office Orders*, by *Postal Orders*, or by *Bank Drafts only*, and *not* by cheques on private accounts. When a fee is paid by a cheque on a Bank, an additional sixpence is required to be added to meet Bank exchange, unless the cheque be payable in Edinburgh or London.

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[1] See footnote, p. 373.

EXTRA-ACADEMICAL TEACHERS.

Regulations of the University Court relative to Certificates of Attendance granted by Extra-Academical Teachers.

The Certificate of Attendance granted to Students by recognised Extra-Academical Teachers, shall, in all cases, state the number of Lectures, or of Meetings for Practical Instruction, in the Course; the number of occasions on which attendance was ascertained; and the number of those occasions on which the Student was present. The Certificate shall also state the general scope of the Course; and, in particular, in the case of *Chemistry*, that the Course included Organic as well as Inorganic Chemistry; in the case of *Midwifery*, that it included the diseases of Women and Children; and, in the case of *Practical Materia Medica*, that it included Pharmacognosy, Pharmacy, Dispensing, and the writing of Prescriptions.

LIST OF EXTRA-ACADEMICAL TEACHERS, WHOSE LECTURES QUALIFY FOR GRADUATION IN THIS UNIVERSITY.

Aberystwyth.

		Date of Recognition.
J. Ainsworth Davis, M.A.	Natural History,	28 July 1886.
H. Lloyd Snape, D.Sc.	Chemistry & Practical Chemistry,	19 March 1888.

Bangor.

James J. Dobbie, D.Sc.,	Chemistry & Practical Chemistry,	30 May 1885.
Reginald W. Phillips, M.A.,	Botany,	30 May 1885.
Philip J. White, M.B.,	Natural History,	9 Dec. 1889.

Birmingham.

F. J. Allen, M.A.,	Physiology & Practical Physiology,	12 Dec. 1887.
T. W. Bridge, M.A.,	Zoology,	9 July 1883.
W. Hillhouse, B.A.,	Botany,	26 Nov. 1883.
Wm. A. Tilden, D.Sc.,	Chemistry & Practical Chemistry,	9 July 1883.
Bertram C. A. Windle, M.D.,	Anatomy,	17 Nov. 1884. 29 Oct. 1888.

Bristol.

G. Munro Smith, L.R.C.P., M.R.C.S.	Physiology & Practical Physiology,	29 Oct. 1888.

(*Certificates for two consecutive Lecture Courses required.*)

CARDIFF.

		Date of Recognition.
W. N. Parker,	Natural History,	28 July 1886.
Claud M. Thompson, M.A., D.Sc.,	Chemistry & Practical Chemistry,	28 July 1886.

(*Lecture Course may be divided between two consecutive Sessions.*)

DUBLIN.

H. A. Auchinleck,	Med. Jurisprudence,	28 Feb. 1881.
A. C. Haddon, M.A.,	Natural History,	23 Jan. 1888.
Chs. R. C. Tichborne, Ph.D.,	Practical Chemistry,	28 Feb. 1881.

DUNDEE.

Percy F. Frankland, Ph.D.,	Chemistry* & Practical Chemistry,	22 April 1889.

(* *Day Lecture Classes only to qualify, and Certificate must state that Student has received instruction in the Chemistry of the non-Metals, the Chemistry of the Metals, and in Organic Chemistry.*)

Patrick Geddes,	Botany,	3 August 1888.
A. Melville Paterson, M.B.,	Anatomy and Practical Anatomy,	18 Feb. 1889.
E. Waymonth Reid, M.B.,	Physiology & Practical Physiology,	9 Dec. 1889.
D'Arcy W. Thompson, B.A.,	Natural History,	12 Oct. 1885.

EDINBURGH.

A. P. Aitken, D.Sc.,	Chemistry & Practical Chemistry,	29 Oct. 1888.
J. O. Affleck, M.D.,	Practice of Physic,	8 Dec. 1879.
Byrom Bramwell, M.D.,	Practice of Physic,	18 Oct. 1880.
J. Macdonald Brown, M.B.,	Anatomy & Practical Anatomy,	18 July 1884.
Alexander Bruce, M.D.,	Pathology & Practical Pathology,	24 January 1887.
Francis M. Caird, M.B., C.M.,	Surgery,	13 August 1886.
Chas. W. Cathcart, M.B., C.M.,	Surgery,	17 Nov. 1884.
George Cowie,	Pract. Materia Med.	18 July 1887.
Wm. Craig, M.D.,	Materia Medica & Prac. Materia Med.	14 July 1879.
T. W. Drinkwater, Ph.D.,	Chemistry, and Practical Chemistry,	8 March 1880. 14 July 1879.
John Duncan, M.D.,	Clinical Surgery,	28 July 1886.
William Duncan,	Prac. Materia Med.,	12 April 1886.
George A. Gibson, M.D.,	Practice of Physic,	9 Dec. 1889.
J. W. B. Hodsdon, M.D.,	Surgery,	3 August 1888.
Alex. James, M.D.,	Pract. of Physic,	3 August 1888.

EDINBURGH—*continued.*		*Date of Recognition.*
J. Falconer King,	Chemistry & Practical Chemistry,	29 Dec. 1874.
W. Scott Lang, M.D.,	Surgery,	29 Oct. 1888.
H. D. Littlejohn, M.D.,	Med. Jurisprudence,	before 1861.
Rev. John Lowe,	Pract. Materia Med.	12 Oct. 1885.
Stevenson Macadam, Ph.D.,	Chemistry & Practical Chemistry,	before 1861.
W. Ivison Macadam,	Chemistry & Practical Chemistry,	23 July 1888.
A. N. MacAlpine, B.Sc.,	Botany,	8 March 1880.
Charles MacGillivray, M.D.,	Surgery,	22 January 1883.
Augustus A. Matheson, M.D.,	Midwifery,	15 May 1889.
Alexander G. Miller, M.D.,	Clinical Surgery,	3 August 1888.
R. Milne Murray, M.B.,	Midwifery,	13 August 1886.
J. Rymer Paterson, B.Sc.,	Pract. Chemistry,	3 August 1888.
	Chemistry,	29 Oct. 1888.
D. Nöel Paton, M.D.,	Physiology and	24 Oct. 1887.
	Prac. Physiology,	19 March 1888.
J. B. Readman, D.Sc.,	Practical Chemistry,	17 Dec. 1888.
William Russell, M.D.,	Pathology & Practical Pathology,	6 August 1887.
Johnson Symington, M.D.,	Anatomy and Practical Anatomy,	14 July 1879.
Ralph Stockman, M.D.,	Materia Medica & Prac. Materia Med.,	9 Dec. 1889.
J. Arthur Thomson, M.A.,	Natural History,	28 July 1886.
Roderick Urquhart,	Pract. Materia Med.,	12 Oct. 1885.
Alexander Wood,	Prac. Materia Med.,	24 January 1887.
John Wyllie, M.D.,	Practice of Physic,	20 Dec. 1878.

GLASGOW.		
John Barlow, M.D.,	Physiology,	26 Nov. 1883.
	Prac. Physiology,	8 January 1890.
A. M. Buchanan, M.D.,	Anatomy and Practical Anatomy,	12 Oct. 1874.
H. E. Clark,	Anatomy and Practical Anatomy,	30 January 1884.
Joseph Coats, M.D.,	Pathology,	11 Oct. 1875.
Eben. Duncan, M.D.,	Med. Jurisprudence,	24 Oct. 1887.
James Dunlop, M.D.,	Surgery,	12 Oct. 1874.
Sampson Gemmel, M.D.,	Practice of Physic,	18 July 1881.
Wm. M'Ewen, M.D.,	Surgery,	9 July 1883.
James M. Milne, Ph.D.,	Chemistry & Practical Chemistry,	30 July 1884.
Alexander Napier, M.D.,	Materia Medica,	22 April 1889.

LONDON.

		Date of Recognition.
G. B. Howes,	Natural History,	18 July 1887.
D. H. Scott, M.A., Ph.D.,	Botany,	18 July 1887.
T. E. Thorpe, Ph.D., F.R.S.,	Chemistry & Practical Chemistry.	9 Dec. 1889.

NOTTINGHAM.

Frank Clowes, D.Sc.,	Chemistry & Practical Chemistry.	9 Dec. 1889.

OXFORD.

Alfred Willson,	Pract. Materia Med.,	29 Oct. 1888.

SHEFFIELD.

W. Carlton Williams, B.Sc.,	Chemistry & Practical Chemistry,	26 Nov. 1883.

RIGHTS OF THE GRADUATES IN MEDICINE AND SURGERY OF SCOTLAND ACCORDING TO THE MEDICAL ACT.

Before the passing of the Medical Act of 1858, the Degree of Doctor of Medicine granted by the Universities of Scotland (as the possessor underwent a complete education and examination in all departments of Medicine, Surgery, and Midwifery), qualified the Graduate to practise every branch of the Medical profession throughout Scotland. One principal purpose of the Medical Act was to extend local rights of practice over the whole of Her Majesty's dominions. But according to the hitherto accepted reading of a dubious clause in the Act, no one can practise both Medicine and Surgery without possessing two distinct Diplomas—one for Medicine and another for Surgery. The Universities were thus compelled, in justice to their Graduates, to give them the additional title of Master in Surgery, not as implying any additional study or examination, but as declaring more distinctly their qualifications, and to permit Registration as regularly qualified practitioners in the whole field of their professional education. The Secretary for War some time ago issued an Order that candidates for admission into the Medical service of the Army should obtain their qualifications in Physic and Surgery from two different sources; the effect of which would have been to

prevent any one University from qualifying for this purpose. The Scottish Universities' Commissioners, recognising the serious evils of such a system, followed up a remonstrance which had been offered on the part of the University of Edinburgh, and obtained the rescinding of all restrictions in the source of qualification. Consequently, any single University in Scotland can now qualify candidates for the Military and Naval Services as well as for any other public Medical service in the country.

THOMAS R. FRASER, M.D.,
Dean of the Faculty of Medicine, and Professor of Materia Medica.

DOCTORS OF MEDICINE

WHO HAVE BEEN AWARDED GOLD MEDALS FOR THEIR THESES FROM 1885 TO 1889, BOTH YEARS INCLUDED.[1]

1885.
Harry Drinkwater, England
John L. Gibson, Australia
Edwin Hyla Greves, England
Charles Kennedy, Scotland
Alexander M'Cormick, Scotland
Ernest Frederick Neve, England
Diarmid Noël Paton, Scotland [1]
Johnston Symington, England [2]

1886.
Edward Carmichael, Scotland
William Hunter, Scotland
Allan Macfadyen, Scotland
Andrew M. Paterson, England [3]
Ralph Stockman, Scotland

1887.
George A. Atkinson, England
Alexander Bruce, Scotland
John Gibson, Orkney
William C. S. Miller, Scotland
Robert Wm. Philip, Scotland
John Stevens, Scotland

1888.
James Graham, Scotland
John Berry Haycraft, England
George Mackay, Madras

1889.
Herbert H. Ashdown, England
John W. Ballantyne, Scotland
Arthur J. M'D. Bentley, England
Kenneth M. Douglas, Scotland
Thomas A. Helme, England
Henry Alexis Thomson, Scotland
Joseph Tillie, Scotland
Herbert F. Waterhouse, England

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[1] The names of those who received Gold Medals prior to 1859 will be found in the List of Graduates in Medicine of the University of Edinburgh since its foundation, published in 1867, and the names of those who received Gold Medals from 1859 to 1889, both years included, will be found in the Historical Appendix to List of Graduates, published in 1889, pp. 128, 129.

[1] Examiner in Physiology, University, Edinburgh.
[2] Examiner in Anatomy, University of Edinburgh.
[3] Professor of Anatomy, University College, Dundee.

DOCTORS OF MEDICINE, WITH THE TITLES OF THEIR THESES, WHO GRADUATED ON 1ST AUGUST 1889.

*** *Obtained Gold Medals for their Dissertations.*

** *Deemed worthy of competing for Gold Medals.*

* *Commended for their Dissertations.*

*** Herbert Harding Ashdown, England, M.B., C.M. (with Second - Class Honours), 1882. A Study of the Functions of the Kidney: an Experimental Research.

*** John William Ballantyne, Scotland, M.B., C.M., 1883. Normal and Pathological Anatomy of the New-Born Infant, studied in frozen sections and applied to Midwifery.

** William Burney Bannerman, Scotland, M.B., C.M., 1881. On the Nature of Malaria and its Prophylaxis.

*** Arthur James M'Donald Bentley, England, M.B., C.M., 1871. Beri-beri: its Etiology, Symptoms, Pathology, and Treatment.

William Haig Brodie, Scotland, M.B., C.M., 1881. Notes on Uric Acid in relation to Disease.

Harbit Brown, England, M.B., C.M., 1885. Notes on some Forms of Paralysis, with cases.

William Hall Calvert, Scotland, M.B., C.M., 1882. Pyrexia during Puerperium.

Edmund Capper, England, M.B., C.M., 1886. Congenital Phimosis.

* James Matthew Caw, Scotland, M.B., C.M., 1883. Alcohol and Epilepsy: their Interaction and Share in the Production of Dypsomania and Mania Transitoria.

10** Frederick Orloff Combe, England, M.B., C.M., 1880. Thrombosis of the Cerebral Sinuses.

** Richard Davidson, Scotland (M.A.), M.B., C.M., 1885. The Operations of Midwifery in Private Practice.

* George Cecil Dickson, Scotland, M.B., C.M. (with Second - Class Honours), 1882. Synchronous Pulse and Respiration occurring in Typhoid Fever.

*** Kenneth Mackinnon Douglas, Scotland, M.B., C.M. (with Second - Class Honours), 1885. On Hernia.

Oliver Field, England, M.B., C.M. (with Second-Class Honours), 1886. Antipyrin, with reference to some of its more recent Applications.

Thomas Henry Fiske, England, M.B., C.M., 1886. On the so-called Antagonism between Heart Disease and Pulmonary Tuberculosis.

* Duncan Forbes, Scotland (M.A.), M.B., 1877. Some Clinical Cases of Disease in the Large Serous Cavities.

** Peter Fraser, Wales, M.B.,

C.M., 1886. Puerperal Eclampsia.

Charles Walter Van Geyzel, Ceylon, M.B., C.M., 1877. Early Midwifery and the Practice of Obstetrics in Ceylon.

* Thomas Gordon, Scotland (M.A.), M.B., C.M., 1879. Acute Rheumatism.

20* John Scott Haldane, Scotland (M.A.), M.B., C.M., 1885. The Methods of Investigating Quantitatively the Heat Production and the Respiratory Exchange of Material in Animals.

* James Harrison, England, M.B., C.M., 1887. An Enquiry into the Causation of Endemic Goitre.

* Francis William Nicol Haultain, Ceylon, M.B., C.M., 1882. Necrosis of the Bladder.

* Charles Williams Hayward, England, M.B., C.M., 1886. Idiopathic Symmetrical Gangrene.

*** Thomas Arthur Helme, England. M.B., C.M. (with Second-Class Honours), 1885. Anatomy and Physiology of the Uterus, and Physiological Action of Drugs upon it.

Robert Wilberforce Inkster, Shetland, M.B., C.M., 1886. Cerebral Circulation.

* Robert Jardine, New Brunswick, M.B., C.M., 1886. Puerperal Eclampsia.

Obadiah Johnson, Sierra Leone (B.A.), M.B., C.M., 1886. The Therapeutics of West Africa.

* Arvid Ludvig Kellgren, Sweden, M.B., C.M., 1887. The Technique of Ling's System of Manual Treatment as Applicable to Medicine and Surgery.

Charles Poole Kennard, England, M.B., C.M., 1886. Flat-Foot.

30 David James Lawson, Scotland, M.B., C.M., 1885. On the Use of Chloral Hydrate in Midwifery.

* William Alexander Mackay, Scotland, M.B., C.M., 1883. Surgery in Spain.

** George Owen Carr Mackness, England (B.A.), M.B., C.M. (with First-Class Honours), 1887. On Backward Displacements of the Gravid Uterus: an Enquiry mainly Historical.

* Allan M'Lean, Australia, M.B., C.M., 1868. Investigation of an Outbreak of Enteric Fever in the Village of Fortunes Well, Portland.

* Ernest Edmund Maddox, England, M.B., C.M., 1882. A New Kind of Spectacles for Astigmatism.

Alfred Mann, England, M.B., C.M., 1886. Typhoid Fever in Children.

* Ralph Smith Miller, Scotland, M.B., C.M., 1883. Diphtheritic Paralysis.

Hugh Meyer Montgomerie, England, M.B., C.M., 1887. Adenoid Vegetations.

** Thomas Goodall Nasmyth, Scotland (D.Sc.), M.B., C.M., 1876. The Physical and Chemical Conditions of Coal Mines, and Effects on

Miners' Diseases and Mortality.

* John Tawse Nisbet, Scotland, M.B., C.M., 1883. Exophthalmic Goitre.

40* Sydney Partridge, England, M.B., C.M., 1885. Heredity as Influencing Neuralgia.

** George Carrington Purvis, India, M.B., C.M. (with First-Class Honours), 1882. The Minute Structure of the Electric Organ of the Common Skate.

Richard Frank Rand, England, M.B., C.M. (with Second - Class Honours), 1880. Experiences in Microscopical Technique.

Thomas Rhodes, England, M.B., C.M., 1884. Different Methods of Treatment of Hysteria.

Ernest Theophilus Roberts, England, M.B., C.M., 1886. Tracheotomy in Diphtheria.

* Thomas Henry Bobinson, England, M.B., C.M., 1885. The Malarial Fevers of the Indian Terais.

* William Edwards Sawers Scott, England, M.B., C.M., 1885. Results of a Series of Experiments with Nitrites in Cases of Asthmatic Dyspnœa.

* Edward Fowler Scougal, England (M.A. Aberd.), M.B., C.M., 1879. Erythroxylon Coca and Cocaine.

Otto Wein Smith, Scotland, M.B., C.M., 1875. Hydatid Disease of the Liver and Lungs.

George Skelton Stevenson, England, M.B., C.M., 1875. On the Surgical Treatment of Hydatid Disease of the Liver, with Report of a Case.

50 Robert Stirling, Scotland (M.A.), M.B., C.M., 1885. Cerebral Cysts.

Alfred Sykes-Ward, England, M.B., C.M., 1881. Chronic Muscular Atrophy.

* William George Sym, Scotland, M.B., C.M., 1886. Diphtheritic Paralysis of Accommodation, and Allied Conditions.

William James Thomas, Wales, M.B., C.M., 1885. Antifebrin.

*** Henry Alexis Thomson, Scotland, M.B., C.M. (with Second - Class Honours), 1885. Tuberculosis of Bones and Joints.

*** Joseph Tillie, Scotland, M.B., C.M. (with First - Class Honours), 1886. Contributions to the Pharmacology of Curare, Curarin, and Methyl Strychnium.

John Warnock, Australia, M.B., C.M., 1885. On some of the Relations between Menstruation and Insanity.

*** Herbert Furnivall Waterhouse, England, M.B., C.M., 1887. An Experimental Inquiry into the Influence of certain Factors in the Causation of Peritonitis.

Charles Louis Williams, England, M.B., C.M., 1886. Sudden Death.

59** George Edward Cartwright Wood, Scotland, M.B., C.M., 1885. The Biology of Anthrax Bacillus.

18TH APRIL 1890.

* Charles Newberry Cobbett, England, M.B., C.M., 1883. The Diagnosis of Fallopian Tube Disease; with Illustrative Cases and Notes on the Operation of Salpingo-Oöphorectomy.

GRADUATES (M.B., C.M.) WHO HAVE PASSED THE EXAMINATIONS WITH HONOURS FROM 1885 TO 1889, BOTH YEARS INCLUDED. [1]

1885.

Class I.

John Macintosh Balfour, Scotland
Paul Bowes, Scotland
Edwin Sargood Fry, England
John Charles Lamont, England
R. F. C. Leith (M.A., B.Sc.), Eng.
Charles James Lewis, England
Reginald Horace Lucy, England
Harold Jalland Stiles, England

Class II.

Frank Gerard Clemow, England
Frederick W. Collinson, England
K. M'Kinnon Douglas, Scotland
Joseph Griffiths, Wales
Thomas Arthur Helme, England
G. F. Johnston, New Brunswick
Ernest Cory Kingdon, England
Henry Bruce Melville, Scotland
E. J. B. Du Moulin, Australia
Arthur M'Leod Ross, Canada
John Simpson, Scotland
George Smith, Scotland
Henry Alexis Thomson, Scotland
Thomas Jackson Thyne, Scotland
Joseph C. S. Vaughan, India

1886.

Class I.

F. H. Jeffcoat (B.A.), N. Zealand
F. Truby King, New Zealand
P. A. Lindsay, New Zealand
George Alexander Pirie, Scotland
John William Smith, England
Joseph Tillie, Scotland
William Henry Turton, England

Class II.

Jas. A. Armitage (B.A.), England
E. W. W. Carlier (B.Sc.), England
Oliver Field, England
Leonard D. Gamble, Ireland
G. L. Gulland (M.A., B.Sc.), Scot.
David Wilson Scotland, India
Arthur Sellars, England
Thomas Jackson Thyne, Scotland
Clarence Henry Waters, England
J. L. Welch (M.A.), Jamaica

1887.

Class I.

André A. Bruère, West Indies
Ernest Christison Carter, England
Thomas Eustace Hill, England
G. O. C. Mackness (B.A.), Eng.
Ralph Henry Maddox, England
Christopher Martin, England
William Aldren Turner, Scotland
Q. M. Wallace (M.A.), Scotland
Thos. Hamilton Ward, England

Class II.

James Cameron, Scotland
George Fred. Odhams, England
Ross Francis Robertson, Scotland
Andrew Rowand, Scotland
William Carr Sprague, England
James Richard Whitwell, England
William Fraser Wright, Scotland

[1] For names of those who received the Degrees with Honours prior to 1889, see Historical Appendix to List of Graduates of the University, published in 1889, pp. 129-132.

1888.

Class I.

Louis Edw. Barnett, N. Zealand
Thomas Watts Eden, England
Robt. Alex. Fleming (M.A.), Scot.
William Fordyce (M.A.), Scotland
John Montgomery, Scotland
Robert Muir (M.A.), Scotland

Class II.

William Andrew Betts, England
Robert Edie, Scotland
Sydney Jamieson (B.A.), Australia
Stephen Moister Laurence, West Indies
William George Laws, England
Frederick John M'Cann, Scotland
Jas. Middlemass (M.A., B.Sc.), Scotland
James Ritchie (M.A.), Scotland
James Smuts, Cape Colony
John Somerville, New Zealand
Isaac Thompson, England
John Christopher Thomson (M.A.), Scotland
James Henry Traquair, Scotland
Ninian George Trotter, N. Zealand
Dawson Fyers Duckworth Turner (B.A.), England
John Clarence Webster (B.A.), Canada
John David Williams, Wales

1889.

Class I.

Robert Oswald Adamson (M.A.), Scotland
John William Crerar, Scotland
William Fred. Farquharson, Scot.
James Lackie, Scotland
Jas. Hill Williamson Laing (M.A., B.Sc.), Scotland
Hamilton Graham Langwill, Scot.
Alexander Maclean, Scotland
Eustace G. Pilgrim, Barbados
Wm. Gordon Woodrow Sanders, Scotland
James Andrew Thyne, Scotland
George Wilkinson, England

Class II.

Robert Dunlop Reid Allison, Scot.
William Everett, England
George Alfred Walter, England
Colin Gordon, England
Ewan John Maclean, Wales
James Monteith, Scotland
Benjamin Sweeten, Scotland
C. N. C. Wimberley, Scotland

BACHELORS OF MEDICINE AND MASTERS IN SURGERY, WHO GRADUATED ON 1ST AUGUST 1889.

Small CAPITALS *indicate First-Class Honours.*

Italics Second-Class Honours.

R. O. ADAMSON (M.A.), Scot.
Robert D. R. Allison, Scot.
Chas. Arthur Anderson, Scot.
Charles M. Anderson, India
John Henry Aytoun, Scot.
J. E. A. G. Becker, England
James Richard Bibby, Eng.
Arthur Sandeman Bowes, Eng.
Edward Wm. Rawle Branch (B.A.), West Indies
Fred. P. Bremner, Canada.
Lewis C. Bruce, Scotland
James Brunton, Scotland
Wm. A. Bryant, England
Leonard H. Bryson, Scotland
Robert D. Buchanan, Scot.

Thomas L. Bunting, England
Barend Burger, Cape Colony
Thomas J. Burton, Scotland
E. S. R. Cadman, England
Alf. W. Campbell, Australia
David A. Carruthers, Eng.
S. W. Carruthers, England
Percy Carr-White, England
A. W. Carter, Cape Colony
Robert Cattley, England
L. de Bylandt Christian, Eng.
Ernest Shaw Clark, England
Arthur Clarkson, England
Samuel G. Connor, Ireland
Jas. H. Conyers, Demerara
Allaster E. Cox, Australia
JOHN WM. CRERAR, Scotland
H. G. Critchley, (M.A.), Eng.
Geo. Matheson Cullen, Scot.
James Cunningham, Scotland
Henri Dardenne, Mauritius
David Geo. Davidson, Scot.
Frederick A. Day, Australia
John R. Dickson, Trinidad
Herbert Dobie, England
John Josiah Douglas, Scotland
Andw. G. Dow (M.A.), Scot.
E. H. Duncan (M.A.), Scot.
John W. Edwards, Wales
Matthew Elder, Scotland
William Everett, England
W. F. FARQUHARSON, Scot.
Edward Fawcett, England
Samuel Fergusson, Scotland
Thomas Frankish, England
R. V. Fulton, New Zealand
Alfred Walter George, Eng.
Charles G. Gibson, Scotland
James Albert Gibson, Scot.
Walter Scott Gibson, Scot.
Colin Gordon, England
Henry Laing Gordon, Eng.
George Govan, Scotland
Guy Grindlay, England
Patrick Balfour Haig, Scot.
John Hardie, Scotland
Patrick Wood Hislop, Scot.
Frank A. A. Holmden, Eng.
Alexander C. Houston, Scot.
Robert Edward Howell, Eng.
H. C. Hudson, Cape Colony
William Hugh Hughes, Eng.
James Huskie, South America
Thomas W. Iddon, England
Herbert M'Clelland Inglis (B.A.), N. Z.
Peter Jones, Wales.
Hugo de Dreux Kunz (M.A.), Scotland
JAMES LACKIE, Scotland
JAMES H. W. LAING (M.A., B.Sc.), Scotland
H. G. LANGWILL, Scotland
Charles B. Lawson, Scotland
William Leask, Scotland
J. W. Leitch (B.A.), Australia
H. A. Leschen, Australia
Oswald R. Lewis, England
Thomas H. Littlejohn, Scot.
James Luke, Scotland
John S. S. Lumsden, India
Stuart G. M'Allum, India
John Macdonald, Scotland
W. Stuart M'Dougall, Scot.
J. M. M'Gill, (M.A.), Scot.
Ronald P. Mackenzie, Scot.
John M'Laren, Scotland
ALEXANDER MACLEAN, Scot.
Ewen John Maclean, Wales
C. G. MacLeod, (M.A.), Scot.
William B. MacTier, Scot.
Frederick Wm. Mann, India
Chas. John L. Mansel, Eng.
William Manuel, Scotland
Edward F. Maynard, England
William Ombler Meek, Eng.
Ernest Arthur Milner, Eng.
James Monteith, Scotland
Thos. Lewis Morgan, Wales
Ambrose W. Mortlock, Eng.
Henry Temple Mursell, Eng.
Alexander Nasmyth, Scot.
Francis Jas. Nicoll, N. Zealand
William Oliver, Scotland

W. H. B. O'Neill, Australia
William O'Rourke, Ireland
Robert Griffith Owen, Wales
William M. Parham, England
Charles Paton Parry, Wales
William Jas. Peddie, Scotland
E. G. PILGRIM, Barbados
William Polson, Scotland
Samuel Poole, England
Alexander Jack Prentice, Scot.
Petrus G. Pretorius, S. Africa
Fred. A. G. Purchas, Jamaica
Peter M. Reid, Australia
Francis W. Reitz, Cape Colony
Martin Jas. Richardson, Eng.
Alexander B. Ritchie, Scot.
T. M. Ritchie (B.Sc.), Scot.
Chas. G. Robson-Scott, Scot.
Frederic W. F. Ross, Jamaica
Robert D. Rudolph, Canada
W. G. W. SANDERS, Scot.
John Alexander Scott, Eng.
Wm. Allan Simpson, Scot.
James L. Smith (M.A.), Scot.
Harold A. Stalkartt, India
John D. Stanley, Ireland
Ernest G. B. Starkie, Burmah
Edward Stechan, Scotland
John Wm. Steven, Scotland
Frank Stevenson, England
Frederick N. Stewart, Scot.
George Neil Stewart (M.A., D.Sc.), Scotland
Kenneth T. Stewart, England
T. P. Stewart (M.A.), Scot.
Benjamin Sweeten, Scotland
Ernest Edmund Taylor, Eng.
James Maxtone Thom, Scot.
Evan Cambria Thomas, Wales
Alexander Thomson, Scotland
William Ernest F. Thomson (M.A.), Scotland
JAMES AND. THYNE, Scot.
Arthur Logan Turner, Scot.
Gilles Vandewall, Orange Free State
John Justinian Vernon, Eng.
Arthur John Wallace, Eng.
Herbert Watthews, England
David Westwood, Scotland
Abraham Wheeler, Australia
Arthur John Whiting, Eng.
Herbert Henry Wilde, Eng.
GEORGE WILKINSON, Eng.
Alex. Fraser Wilson, Scot.
Arthur Wilson, Scotland
George Robert Wilson, Scot.
John Wilson (M.A.), Scotland
John Johnstone Wilson, Scot.
Chas. N. C. Wimberley, Scot.
Richard Wyse (M.A.), Scot.

30TH NOVEMBER 1889.

Julius Henry Beilby, Scotland
Alfred Chas. Coles, England
William Thomas Crawford (M.A.), Scotland
Fred. Eustace Crossley, Eng.
Rhys Davies, Wales
Edmund Eustace Dyer, Eng.
Arthur Spencer Edwards, Eng.
J. Fitzgerald (B.A.), N. Zeal.
Ebenezer Forsyth, Scotland
Arthur Hanbury Frere, Eng.
Samuel A. D. Gillespie, Scot.
Egidius B. Glaeser, C. Colony
Arthur E. H. C. Hallen, Scot.
Arthur H. Hallen, England
James Harvey, Scotland
Matthew L. Hewat, S. Africa
Chas. W. Howatson, Jamaica
Hugh Jameson, England
George E. Lanyon, England
Fred. A. L. Lockhart, Canada
Fred. W. Lyle, Scotland
Donald F. M'Bean, Scotland
Andrew H. W. Macdonald (M.A.), Scotland
Henry Mackay, Scotland

25 Chas. C. Macknight, Austral.
James M'Nidder, Scotland
George Symers Mill, Scotland
John Gordon Munn, Scotland
Charles D. Murray, Canada
30 Walter Paterson, Scotland
Ernest A. Penfold, England
Stewart A. Pike, Newfound.
Arthur F. R. Platt, England
Thos. Dobson Poole, England
35 John H. Robertson, Scotland
Hassan C. N. Sakir, Mauritius
L. M. Silver (B.A.), Canada
James Spencer, Scotland
Thos. E. K. Stansfield, Eng.
40 John F. de Sylva, India
Jas. A. Taylor (M.A.), India
Mowbray Taylor, England
George Thyne, Scotland
Thos. H. Underhill, England
45 Arthur W. Wilcox, England

25TH JANUARY 1890.

John Wesley Hart, New South Wales.

18TH APRIL 1890.

James Brown Bird, Scotland.
Andrew William Messer, England.

Class Prize Lists.

WINTER SESSION, 1889-90.

I.—CHEMISTRY.

ROBERT WILSON MEMORIAL PRIZE.—Edward Crarer, Blairgowrie.

PROXIME ACCESSIT.—John Tennant, Ayr.

FIRST-CLASS HONOURS.—1. Edward Crarer, Blairgowrie; 2. J. Purves Stewart, Edinburgh; 3. Robert W. Briggs, Derby; J. Melvin Lowson, Forfar, and John Tennant, Ayr—equal; 6. S. Percy Thomas, London; 7. T. A. Coward, Carlisle, and John Smith Flett, Kirkwall—equal (*Medallists*); 9. Andrew Croll, Dundee, and Cecil E. Salt, Shrewsbury—equal; 11. C. Crerar, Maryport; William Garbutt, Shildon; Percy J. Henderson, Edinburgh, and J. Rennie, Leith—equal; 15. Tom D. Forbes, Cults, Fife; 16. Louis V. Jacques, Mauritius, and John Kippax, Burnley—equal; 18. Ronald M. Clark, Perthshire, and D. S. Johnston, Inverness-shire—equal; 20. Ernest R. Dodds, London; George Home, New Zealand, and S. W. Prowse, Prince Edward Island—equal; 23. F. V. Thomas, London; 24. C. Branch, St Kitts, W.I.; 25. John B. Duff, Edinburgh; J. D. Gregorson, Argyleshire; John Steed, Baldock, and J. L. Sykes, Yorkshire—equal; 29. John A. Lee, Peak-Forest; 30. R. St G. Smallridge Bond, Wiltshire; R. T. Davidson, Edinburgh, and John H. Seon, Trinidad—equal;

33. T. A. Clinch, London; James G. M'Naughton, Bathgate; James M. Rutherford, Dumfries, and G. H. Wilson, Penicuik—equal; 37. J. C. Beattie, Dumfriesshire; G. F. Leicester, Southport, and Walter B. Turnbull, Haddington—equal.

SECOND-CLASS HONOURS.—40. Evan Jones, Wales; A. M'Neil, Australia, and F. T. Walmsley, Preston—equal; 43. William B. Craig, Musselburgh; 44. J. M. Buist, Perth, and A. Kennedy, Inverness—equal; 46. W. Riach, Edinburgh; 47. Thomas Gibson, Edinburgh; William A. Gray, Aberdeen, and Alexander B. Stevens, Bridge of Earn—equal; 50. W. Russell Strapp, Natal; 51. J. Rutherford Gilmour, Edinburgh; W. F. M'Allister-Hewlings, Leicester; James D. Macrae, Ross-shire, and James M'K. Wishart, Largs—equal; 55. W. Alexander Gibb, Scotland, and Andrew Scott, Greenock—equal; 57. T. Pettey, Bournemouth, and W. M. Selby, Wigtownshire—equal; 59. E. H. Fraser, Hull; Frederick P. Hearder, Carmarthen, and Harry S. Walsh, Blackburn—equal; 62. Thomas J. I. Craig, Fife; E. P. Dickin, Northampton; W. Roy Jackson, Perth; A. H. Moorhead, Edinburgh; A. G. P. Thomson, Oldham, and R. J. T. Wright, Portobello—equal; 68. R. S. Cunliffe, Edinburgh; Lachlan Grant, Glencoe; C. A. Hogg, Tasmania, and R. J. Irving, Carlisle—equal; 72. John Murray, Montrose: 73. D. Menzies Conacher, Perthshire, and C. A. R. Farrell, Trinidad—equal; 75. G. C. Laing, Edinburgh; 76. William H. Gaunt, Ballarat; James M. Menzies, Longniddry, and David Thomas, Lockerbie—equal; 79. J. W. Thomson Walker, Newport-on-Tay; 80. T. A. Glover, Maxwelltown, and A. Paget Steavenson, Darlington—equal; 82. Arthur Foster, Blackburn; A. L. de Jager, Cape of Good Hope, and A. M. N. Pringle, Aberdeenshire—equal; 85. W. D. Adams, Edinburgh; E. C. Edwards, Suffolk, and G. H. Monkhouse, British Guiana—equal; 88. C. J. H. Aitken, Edinburgh; John Clark, Sorn; J. W. Geddes, Dumfries; and E. W. J. Ireland, Tasmania—equal; 92. William Bethune, Lochgelly; William Catto, Aberdeenshire; George A. Dickson, Edinburgh, and P. D. Fick, Cape of Good Hope—equal; 96. Henry Jones, Swansea, and Murray Babington Steuart, Edinburgh—equal; 98. J. Macphail, Inverness; W. W. Pascoe, New Brunswick; S. H. Richards, Brighton; Colin H. Ridley, Demerara; Lauchlan Rose, Blair Athole; D. Smellie, Edinburgh, and Ernest E. Waters, Sheffield—equal.

PRACTICAL CHEMISTRY.

SUMMER SESSION, 1889.

FIRST-CLASS HONOURS.—1. Robert Hutchison, Edinburgh; 2. James Walker, Edinburgh (*Medallists*); 3. G. H. Hogg, Tasmania; 4. Wm. E. Foggie, Dundee; 5. George Mathieson, Musselburgh; 6. John Clark, Ayrshire.

SECOND-CLASS HONOURS.—7. Charles Tyrie, Pitlochrie; 8. M. Emin, Calcutta; 9. C. P. Stewart, Perth; 10. J. K. Watson, Bournemouth; 11. J. R. Higson, Ashton-upon-Ribble; 12. F. H. Clayton, England, and T. B. Hearder, Edinburgh—equal; 14. Alfred Cowper, Castle-Douglas; 15. James Wood, Burntisland; 16. W. A. J. Alexander, East Lothian, and J. D. P. M'Latchie, Lanark—equal; 18. A. V. MacGregor, Edinburgh; 19. C. T. C. Kingdon, Derbyshire, and J. P. Milne, Calcutta—equal; 21. J. F. W. Kupferbürger, Cape Colony; 22. D. R. Crow, Lochgilphead.

WINTER SESSION, 1889-90.

FIRST-CLASS HONOURS.—1. Edward Crarer, Blairgowrie; 2. Cecil E. Salt, Shrewsbury; 3. John B. Duff, Edinburgh, and F. V. Thomas, London—equal; 5. R. T. Davidson, Edinburgh—(*Medallists*); 6. C. Branch, St Kitts, W.I., and Percy J. Henderson, Edinburgh—equal; 8. William Bethune, Lochgelly; William Catto, Aberdeenshire; T. A. Clinch, London, and W. M. Selby, Port-William—equal; 12. John Smith Flett, Kirkwall; D. S. Johnston, Inverness-shire, and T. Pettey, Bournemouth—equal; 15. C. Crerar, Maryport, and James D. Macrae, Ross-shire—equal; 17. Andrew Croll, Dundee; Tom B. Moore, California; and Andrew Philip, Kirkcaldy—equal; 20. J. C. Beattie, Dumfriesshire; W. Riach, Edinburgh, and John Steed, Baldock—equal; 23. John Kippax, Burnley; 24. Ronald M. Clark, Perthshire, and John Gilchrist, Argyleshire—equal; 26. Tom D. Forbes, Cults; 27. A. H. Moorhead, Edinburgh, and John Tennant, Ayr—equal; 29. A. M'Neil, Australia; 30. Walter B. Turnbull, Haddington; 31. W. D. Adams, Edinburgh; C. A. Hogg, Tasmania; J. Melvin Lowson, Forfar, and David Murray, Hawick—equal; 35. E. H. Fraser, Hull, and J. M. Menzies, Edinburgh—equal; 37. Arthur Foster, Blackburn; Thomas Gibson, Edinburgh; James Havard Jones, Llandyssil; R. W. Innes Smith, Edinburgh, and J. L. Sykes, Yorkshire—equal; 42. John Clark, Sorn; R. J. Irving, Carlisle; John A. Lee, Peak Forest; G. F. Leicester, Southport; T. P. Monteath, Moffat, and J. W. Prowse, Prince Edward Island—equal; 48. Alexander Emslie, Edinburgh; E. W. J. Ireland, Tasmania; H. U. Duncan, Kirkcaldy; J. M. Morris, Forfar, and A. Paget Steavenson, Darlington—equal.

SECOND-CLASS HONOURS.—53. J. A. Featherstone, England; John W. Geddes, Dumfries; John Bell Thomson, Otago, and F. T. Walmsley, Preston—equal; 57. Paul Eug. H. Guiseppi, Trinidad; Evan Jones, Wales, and G. C. Laing, Edinburgh—equal; 60. T. A. Glover, Maxwelltown; Alex. Nish, Gatehouse; John H. Seon, Trinidad; S. S. Skinner, New Brunswick; D. Smellie, Edinburgh; and A. G. P. Thomson, Oldham—equal; 66. J. Rutherford Gilmour, Edinburgh; James Henderson, Kirkcudbright; J, Purves

Stewart, Edinburgh, and James M'K. Wishart, Largs—equal; 70. David A. Johnstone, Lochmaben; and John A. Purves, Morebattle—equal; 72. A. Palmer Chapman, London; Ernest R. Dodds, London; J. D. Gregorson, Argyleshire; John M'Clay, Strabane, and Robert Somerville, Edinburgh—equal; 77. T. G. Milligan, Kirkgunzeon; 78. James W. Kippen, Aberfeldy; J. Lawrie, Ayr, and Colin H. Ridley, Demerara—equal; 81. Hugh M'Donald, Glasgow, and J. W. Sutcliffe, Creetown—equal; 83. William Garbutt, Shildon; Frederick P. Hearder, Carmarthen; Alexander Kennedy, Inverness; Malcolm M'Larty, Edinburgh; Harry A. Sheffield, New Brunswick, and Ernest E. Waters, Sheffield—equal; 89. James Anderson, Edinburgh; Andrew Balfour, Edinburgh, and William B. Craig, Musselburgh—equal; 92. P. D. Fick, Cape of Good Hope; R. M'Camon, Stranraer; James G. M'Naughton, Bathgate, and J. Lloyd Owen, North Wales—equal; 96. Alexander B. Stevens, Bridge of Earn; 97. William A. Gray, Aberdeen, and D. Matheson, Edinburgh—equal; 99. F. W. Allkin, Denton; James Fenton, Perth; Arthur M. N. Pringle, Aberdeenshire; and Murray Babington Steuart, Edinburgh—equal; 103. E. C. Edwards, Suffolk; Robert Finlay, Fauldhouse; John Murray, Montrose; E. J. Walker, Queensland, and Harry S. Walsh, Blackburn—equal; 108. Robert Bennie, Galashiels; B. R. C. Christie, Lanarkshire; C. A. R. Farrell, Trinidad, and John Gilmour, Burntisland—equal; 112. Guy Beatty, Ireland, and Lachlan Grant, Glencoe—equal; 114. Geo. A. Dickson, Edinburgh; J. V. Forrest, Antigua, W.I.; A. L. de Jager, Cape of Good Hope; W. F. M'Allister-Hewlings, Leicester; John Maciver, Stornoway, and William H. Mackenzie, Little Dunkeld—equal; 120. David Fairweather, Edinburgh; Percy C. Faithfull, Winchester; and W. Alexander Gibb, Scotland—equal; 123. George C. Elliott, Nantwich; A. M. Fleming, Edinburgh, and Matthew Lawrie, Fauldhouse—equal; 126. H. Bateson, Bolton; J. K. Borland, Ayrshire; James S. Gordon, Ireland; Edward Hinginbotham, Melbourne, and R. K. Tandan, Agra—equal; 131. G. H. Monkhouse, British Guiana; 132. Wm. S. Malcolm, Muirhead of Liff.

ALEX. CRUM BROWN, M.D., *Professor.*

II.—BOTANY.

SUMMER SESSION, 1889.

(Written Examinations.)

SENIOR DIVISION.

FIRST-CLASS HONOURS.—1. J. Melvin Lowson, Forfar (*Medal*); 2. J. Pentland Smith, Carnbee, Fife; 3. Robert Hutchison, Kirkliston.

SECOND-CLASS HONOURS.—4. Geo. S. Corstorphine, Edinburgh; 5. A. Hill Buchan, Edinburgh; 6. Frederic J. Hare, Darlington.

JUNIOR DIVISION.

FIRST-CLASS HONOURS.—1. Samuel Evans, India; 2. James Adamson, Edinburgh; 3. J. Stewart, Norwell, Perth; 4. Henry P. D'A. Benson, Queensland; 5. A. R. Wilson, Edinburgh; 6. Robt. Pollok, Leith; 7. John Gilmour, Edinburgh, and James Lawson Russell, Mid-Lothian—equal (*Medals*); 9. Alexander M. Easterbrook, Lasswade; and John B. Duff, Helensburgh—equal; 11. A. J. Campbell, Selkirk; E. J. H. Fraser, England, and F. C. M. Hutchinson, Derby—equal.

SECOND-CLASS HONOURS.—14. Featherston Cargill, Edinburgh; John W. Craig, Scotland; and W. Roy Jackson, M.A., Perth—equal; 17. J. R. Armstrong, N. Wales; 18. H. M. Crosby, Victoria, and Meredith Young, Lancashire—equal; 20. Christian W. C. Branch, St Kitts, W.I.; Percy J. Henderson, Edinburgh, and Robert Rintoul, Edinburgh—equal; 23. J. F. Carruthers, Inverness, and Herman Schmitz, England—equal; 25. William Garbutt, Darlington; George Home, San Francisco; F. H. G. Hutchison, India; Lewis J. Irvine, Arbroath; J. Purves Stewart, M.A., Edinburgh, and David Thomas, Lockerbie—equal; 31. J. J. Evans, Carmarthen; 32. John Clark, Sorn; 33. Thomas Gibson, Strabane, Ireland; J. Percy Milne, India; J. Alan Murray, Edinburgh; and F. V. Thomas, India—equal; 37. R. B. Huxtable, New Zealand, and Malcolm Parkinson, Preston—equal; 39. William Mill, New Zealand; T. R. Scott Sibbald, Thornhill, and W. Russell Strapp, Natal—equal; 42. John J. Hewison, Edinburgh, and Charles Wilson, Edinburgh—equal; 44. P. O. Malabre, Kingston, Jamaica; 45. Andrew Balfour, Edinburgh; C. Crerar, Maryport, and Charles Tweedie, Duns—equal; 48. J. Lyon Fletcher, Manchester; Thomas S. Glover, Carlisle; Geo. F. Longbotham, Seaton Carew; J. Rennie, Banffshire, and Cecil E. Salt, Shrewsbury—equal; 53. W. F. M'Allister-Hewlings, Leicester; 54. Charles K. Millard, Notts; 55. Robert W. Briggs, Derby, and William Young, New Zealand—equal; 57. M. Emin, Calcutta, and Lewis J. Howes, Natal—equal; 59. James S. Gordon, Ireland; G. H. Hogg, France; C. J. Jehu, Llanfair, and O. D. Robson, Calcutta—equal; 63. W. B. Gow, Crieff; 64. Charles G. Murray, Barbados, W.I.; 65. John D. M'Millan, Bradford; W. M. Selby, Kirkcowan, and Wm. Sinclair, Leith—equal.

PRACTICAL BOTANY.

SUMMER SESSION, 1889.

FIRST-CLASS HONOURS.—1. R. Proudfoot, Dumfriesshire; 2. James Adamson, Edinburgh; 3. Howard B. Gladstone, London (*Medals*);

4. James Lawson Russell, Mid-Lothian; 5. Christian W. C. Branch, St Kitts, W.I., and Thomas Gibson, Strabane, Ireland —equal; 7. G. S. Corstorphine, Edinburgh, and James R. Watson, Falkirk—equal.

SECOND-CLASS HONOURS.—9. John Steed, Baldock, and Charles Wilson, Edinburgh—equal; 11. W. Roy Jackson, London; 12. A. H. H. Sinclair, Kenmore; 13. Thomas M. Martin, Strathaven, Lanarkshire; Robert Pollok, Leith, and A. R. Wilson, Edinburgh—equal; 16. John Gilchrist, Anstruther; 17. D. Davidson, Arbroath; 18. D. A. Fullerton, Leith; David C. Hardie, Renton; Percy J. Henderson, Edinburgh; W. M. Selby, Kirkcowan, and W. Russell Strapp, Natal—equal; 23. J. J. Evans, Carmarthen; J. A. Hepburn, Milnathort; G. F. Leicester, Kent, and W. M. Robertshaw, Stocksbridge, Yorks—equal.

SPECIAL COMPETITION IN PRACTICAL CLASS FOR HISTOLOGICAL WORK.

FIRST-CLASS HONOURS.—1. H. F. Menzies; 2. David C. Hardie and J. R. Watson—equal (*Prizes*); 4. John D. F. Gilchrist; 5. Howard B. Gladstone and Robert Pollok—equal; 7. Christian W. C. Branch; 8. James Adamson and A. R. Wilson—equal.

SECOND-CLASS HONOURS.—10. D. Davidson; 11. W. Robertson; 12. Thomas M. Martin; 13. John Penny.

FOR DRAWINGS.

FIRST-CLASS HONOURS.—1. A. R. Wilson; 2. H. F. Menzies; 3. J. D. F. Gilchrist (*Prizes*); 4. D. A. Fullerton; 5. W. M. Robertshaw.

SECOND-CLASS HONOURS.—6. C. W. C. Branch, Robert W. Briggs, Thomas M. Martin—equal; 9. Howard B. Gladstone and J. R. Watson—equal; 11. D. Gordon and E. E. Waters—equal.

WINTER SESSION, 1889-90.

SENIOR.

FIRST CLASS.—John J. Wilson, Lanark (*Prize*).

JUNIOR.

FIRST CLASS.—Richard P. Brocklesby, England (*Medal*); R. J. Irving, Carlisle, and John B. Thomson, New Zealand—equal.

SECOND CLASS.—J. S. H. Walker, Greenock; H. B. Gladstone, London; Ronald Herdman, Edinburgh.

PRACTICAL BOTANY.

Winter Session, 1889-90.

First Class.—T. Stewart Norwell, Perth (*Medal*); Ronald Herdman, Edinburgh; George MacGibbon, Stranraer—equal.

Second Class.—R. J. Irving, Carlisle; C. T. Cory Kingdon, England; J. S. H. Walker, Greenock.

ISAAC BAYLEY BALFOUR, M.D., D.Sc., *Professor.*

III.—NATURAL HISTORY.

Summer Session, 1889.

seniors.

First-Class Honours.—1. W. L. Martin; 2. Alex. C. Ainslie (*Medals*); 3. James V. Paterson, M.A.; 4. W. A. J. Alexander; 5. Lewis B. Beddie, M.A.; 6. George J. F. Morpeth; 7. M. Jennings.

Second-Class Honours.—8. Peter Campbell and M. B. Ray—equal; 10. Robert Gardner; 11. T. Arthur Granger and Donald Smith—equal.

juniors who have attended human anatomy.

First-Class Honours.—1. Louis G. Irvine; 2. John D. M'Millan (*Medals*); 3. J. F. Carruthers and George Horn—equal.

Second-Class Honours.—5. James L. Russell; 6. J. J. Evans and Frank H. G. Hutchinson—equal; 8. Featherstone Cargill, George F. Longbotham, and Walter M. Robertshaw—equal; 11. R. B. Huxtable and Malcolm Parkinson—equal; 13. H. P. Bennett; 14. Hermann Schmitz; 15. T. J. Jehu and Charles Wilson—equal; 17. William Young; 18. Alexander M. Easterbrook, P. O. Malabre, and Wm. Mill—equal; 21. J. G. F. Bent; 22. H. W. Case, G. Herbert Cock, and J. Russell Higson—equal; 25. James Rennie and R. Hoggan—equal; 27. John R. Armstrong, J. H. Murray, and A. H. H. Vizard—equal; 30. W. B. Gow; 31. Alfred Cowper.

juniors who have not attended human anatomy.

First-Class Honours.—1. Alfred Hay; 2. L. V. Jacques; 3. W. F. M'A. Hewlings (*Medals*); 4. J. P. Stewart, M.A.

Second-Class Honours.—5. J. M. N. Paton; 6. J. D. Gregorson; 7. W. R. Strapp; 8. John Clark and M. Emin—equal; 10. C. Crerar; 11. John Kippax, F. V. Thomas, and R. J. T. Wright—equal; 14. E. J. H. Fraser and P. J. Henderson—equal; 16. C. J. H. Aitken; 17. A. J. Campbell and John Steed—equal; 19.

David Thomas; 20. T. R. Williams and J. B. Duff—equal; 22. Thomas Gibson, James Kilgour, and C. E. Salt—equal; 25. Wm. Selby: 26. A. W. M. Auden and Andrew Balfour—equal; 28. W. R. Jackson and W. B. Craig—equal; 30. J. C. Caldwell.

WINTER SESSION, 1889-90.

FIRST-CLASS HONOURS.—1. R. P. Brocklesby (*Medallist*).

SECOND-CLASS HONOURS.—2. J. M. Lowson; 3. James E. Walker; 4. S. H. Richards.

PRACTICAL NATURAL HISTORY.

SUMMER SESSION, 1889.

SECTION *A*.

FIRST-CLASS HONOURS.—1. W. B. Gow and P. O. Malabre—equal; 3. J. Bent (*Medals*); 4. J. J. Evans; 5. H. Case; 6. J. F. Carruthers, J. R. Gilmour, and Percy Henderson—equal; 9. D. H. Burn, J. G. Fraser, J. D. F. Gilchrist, J. D. M'Millan, and George Peterkin—equal.

SECOND-CLASS HONOURS.—14. John R. Armstrong, John B. Duff, R. Hoggan, and W. M. Selby—equal; 18. H. D. Coles, J. L. Leadbetter, A. G. M'Intyre, and J. J. Headley Wood—equal; 22. A. Reginald Bankart, C. Cazalet, and John Clark—equal; 25. David A. Fulerton; 26. R. Owen Morris and J. L. Sykes—equal; 28. C. W. C. Branch, Kenneth Wallace, and Gregg Wilson—equal.

SECTION *B*.

FIRST-CLASS HONOURS.—1. T. Rettie; 2. J. Russell Higson (*Medals*); 3. C. J. Hugo and James G. M'Naughton—equal; 5. T. Arthur Granger.

SECOND-CLASS HONOURS.—6. R. S. Falcon; 7. William Sinclair; 8. William Young; 9. A. D. White; 10. William Anderson; 11. G. C. Laing; 12. Arthur Mackintosh and Muir Sandeman—equal; 14. J. H. Murray and Malcolm Parkinson—equal.

SECTION *C*.

FIRST-CLASS HONOURS.—1. James Rennie (*Medal*); 2. D. Reid Crow and W. R. Strapp—equal; 4. A. Hill Buchan.

SECOND-CLASS HONOURS.—5. Alexander C. Ainslie; 6. F. G. Ballantyne; 7. James Fenton; 8. Thomas Gibson; 9. Robert Ballantyne.

WINTER SESSION, 1889-90.

FIRST-CLASS HONOURS.—1. R. W. Innes Smith (*Medallist*); 2. Andrew Scott and A. C. Turner—equal.

SECOND-CLASS HONOURS.—4. J. S. H. Walker; 5. James W. Horne; 6. C. G. West; 7. David Orr; 8. Alfred Lees Low.

J. C. EWART, M.D., *Professor*.

IV.—ANATOMY.

PRACTICAL ANATOMY.

Summer Session, 1889.

First-Class Honours.—1. James Jay Mapes, New York (*Medallist*); 2. P. W. Shaw, Perthshire; 3. Douglas Ewell, New York; 4. C. W. Chapman, Newcastle; 5. H. B. Hall, Leicestershire; 6. Alexander Hendry, Braemar, and R. M. Leslie, M.A., B.Sc., Ross-shire—equal; 8. R. A. Fox, Somerset; 9. William Wood, Egton; 10. David Ritchie, Edinburgh, and E. J. Weightman, Liverpool—equal; 12. Alex. Mitchell, Elgin; 13. James S. Anderson, Peterhead; 14. James Miller, Falkirk; 15. J. B. Shaw, Dalbeattie, and J. H. Inman, Cheshire—equal.

Second-Class Honours.—18. Walter Tibbitz, Warwick; 18. C. R. Nair, Madras; 19. J. D. Walker, Canada; 20. H. Hearsey, Bareilly; 21. R. B. Gass, Morecambe; 22. A. H. Collins, South Devon; 23. J. G. Leslie, Ross-shire, and Gustave Mann, Assam—equal; 24. M. P. Rodgers, Leicester, and H. S. Walker, Lincolnshire—equal.

students of the third year.

Winter Session, 1889-90.

First-Class Honours.—1. G. K. Grimmer, Canada; George Johnstone, Lochmaben; R. J. Johnston, Edinburgh; and J. B. Yeoman, St Andrews—equal (*Medallists*); 5. Alexander Hendry, Braemar; D. S. Morrison, Ardrishaig; and A. J. Mackintosh, Kingussie—equal; 8. H. S. Wansbrough Jones, Wales, and J. B. Scott, Fifeshire—equal; 10. E. C. Dobie, Chester, and J. Ravensworth Liddell, Portobello—equal; 12. R. E. Adamson, Cirencester; Alex. Brownlie, Inverness; R. W. Gray, Scotland; Sidney Hillier, Gloucestershire; R. Murray Leslie, M.A., B.Sc., Ross-shire; E. S. Littlejohn, Sydney; T. G. Mathews, Appleby; T. D. Walker, Canada; R. B. Wallace, Kendal, and David Wield, Ayrshire—equal; 22. D. C. Bremner, Edinburgh; R. A. Corson, Ayrshire; William Maclean, Ross-shire, and D. W. H. Paterson, Edinburgh—equal; 26. Walter Adam, Dingwall; James Anderson, M.A., Edinburgh; Richard Davies, Hereford; E. Bernard Fuller, Cape Town; L. J. Lamrock, Australia; T. M. Martin, Lanarkshire, and Alex. M'Ewan, Crieff—equal; 33. E. G. Fortune, Fifeshire, and Wm. Rogers, Cumberland—equal; 35. J. S. Anderson, M.A., Peterhead; C. W. Chapman, Newcastle-on-Tyne; C. C. Easterbrook, London; R. O. Petrie, Scotland, and W. J. Walker, Port Adelaide — equal; 40. A. J. Anderson, Madras; T. B. Brierley, Cheshire; G. A. Fothergill, Leamington; Alexander Ingram, Wigtownshire; N. M'Gregor Rattray, Portobello; W. F. Robertson, Roxburghshire,

and Hugh Steven, Scotland—equal; 47. George Bill, Victoria; A. N. S. Carmichael, Edinburgh; P. N. Carmichael, Alloa; R. W. Fell, Durham; C. G. Gomes, Demerara, and C. A. Sturrock, M.A., Scotland—equal; 53. C. R. Edmondson, Liverpool; J. S. Fowler, Fifeshire, and A. J. Van Niekerk, South Africa—equal; 56. S. H. Hartley, Bradford, and H. S. Walker, Lincoln—equal; 58. George Butters, Newburgh; W. S. Campbell, Argyleshire; H. F. Green; E. C. W. Hughes-Games, Isle of Man, and J. G. Leslie, Ross-shire—equal; 63. R. S. Ferguson, Gateshead; H. B. Jones, Wales; H. A. E. Noble, Durham; G. St Clair Thom, Dollar, and Walter Tibbets, Warwick—equal; 68. J. H. Johnston, Skipton; P. J. Munn; W. F. Macarthur, Port-Glasgow, and F. A. Rodriguez, Trinidad—equal; 72. J. H. Ewart, India; James Miller, Stirlingshire; G. L. K. Pringle, Edinburgh, and Robert Rendall, Orkney—equal; 76. J. W. P. Boyd, Edinburgh; J. R. Forster, Whitby, and W. C. Milroy, Dumfriesshire—equal; 79. G. F. Barnardo, Madras; W. T. Fox, Staffordshire; F. J. Hare, Darlington, and H. B. Knox, Haiti — equal; 83. H. E. Fraser, M.A., Inverness; 84. A. E. Dent, Wolverhampton; G. H. Inman, Rockferry, and Robert Knox, Leith—equal.

Second-Class Honours.—87. Cuthbert Christy, Chelmsford, and James Ingram, Morayshire—equal; 89. R. E. Evans, Stratford-on-Avon; 90. Michael Emin, India, and M. H. Foye, Ireland—equal; 92. J. Chalmers Brown, Leith; 93. James Cameron, Scotland; A. H. Macmorran, Newton-Stewart, and J. R. Taylor, Congleton—equal; 96. S. C. Brush, Dundee; A. H. Collins, Wolverhampton, and J. P. Milne, India—equal; 99. F. O. Bell, Ceylon, and Alex. A. Fermie, India—equal; 101. H. M. Green, Worthing; 102. G. S. Walton, Wakefield.

STUDENTS OF THE SECOND YEAR.

LECTURE CLASS.

WINTER SESSION, 1889-90.

First-Class Honours.—Lim Bodh Keng, Singapore, and Percival Vincent Locke, Penang—equal.

PRACTICAL ANATOMY.

WINTER SESSION, 1889-90.

First-Class Honours.—1. P. O. Malabre, Jamaica; D. G. M. Munro, Inverness, and J. J. Wilson, Lanark—equal (*Medallists*); 4. C. H. Bond, Wiltshire; Featherstone Cargill, Edinburgh; Raymond Maxwell, Tasmania, and C. P. Stewart, Perthshire—equal; 8. Thomas Farthing, Spennymoor; J. D. Macmillan, Bradford; L. Oldmeadow, Tasmania, and Cuthbert Thompson, Londonderry—equal; 12, W. A. J. Alexander, East Lothian; J. L. Russell, Mid-Lothian, and Meredith Young, Lancashire—

equal; 15. W. J. W. W. Borthwick, Scotland; George Mathieson, Edinburgh; James M'Donald, Lochee; John Owen, Wales, and Wm. Young, Wellington, New Zealand—equal; 20. J. R. Higson, Ashton-upon-Ribble; A. O'Donoghue Rowan, London, and A. H. H. Sinclair, Kenmore—equal; 23. John Penny, Great Broughton; 24. D. C. Edington, Edinburgh; R. C. Jamieson, Edinburgh, and Thomas Yeates, Belfast—equal; 27. W. M. Brunton, Inverkeithing; Robert Hanton, Cranston; G. H. Hogg, France; J. D. P. M'Latchie, Lanark, and D. G. Newton, India—equal; 32. J. R. Armstrong, N. Wales; D. R. Crow, Argyleshire, and H. A. C. Davidson, Caithness—equal; 35. J. W. Craig, Castle-Douglas, and J. D. Duncan, Arbroath—equal; 37. H. P. Bennett, Redcar, and J. H. Macdonald, India—equal.

SECOND-CLASS HONOURS.—39. George Peterkin, Ross-shire, and W. A. Rutherford, Yorkshire—equal; 41. G. H. Dupont, Grantham, and W. B. Gow, Crieff—equal; 43. Thomas Fentem, Derbyshire; J. H. Glover, Magherafelt; D. B. Hewat, Cape Colony, and J. H. Murray, Montrose—equal; 47. J. D. Noble, Crichton, and Richard Kenyon, Islay—equal; 49. A. R. Bankart, S. Wales; Hugh Macdonald, Glasgow, and P. J. Thomson, Edinburgh—equal; 52. R. E. Legat, Edinburgh; 53. L. B. Beddie, Aberdeenshire; 54. W. H. Robertson, Scotland; 55. A. P. Ross, Windsor; 56. William Scott, Kincardine; 57. J. K. Watson, Bournemouth, and D. M. Ferguson, Scotland—equal.

STUDENTS OF THE FIRST YEAR.

LECTURE CLASS.

WINTER SESSION, 1889-90.

FIRST-CLASS HONOURS.—1. J. P. Stewart, Edinburgh; 2. R. W. Briggs, Derby; 3. Percy J. Henderson, Edinburgh, and John Tennant, M.A., Ayr—equal (*Medallists*); 5. Thomas Gibson, County Tyrone, and Andrew M'Neil, Australia—equal; 7. Charles Crerar, Maryport, and John Kippax, Lancashire—equal; 9. J. E. Moorhouse, Yorkshire, and David Thomas, Lockerbie—equal; 11. T. A. Clinch, London; T. R. S. Sibbald, Dumfriesshire, and F. V. Thomas, Serampore, India—equal; 14. J. S. Flett, Orkney; 15. J. B. Duff, Scotland; E. C. Edwards, Woodbridge; David Murray, Hawick, and J. L. Sykes, Yorkshire—equal; 19. J. G. Christie, Bervie, and W. Roy Jackson, M.A., Perth—equal; 21. A. W. M. Auden, Church Broughton; Andrew Balfour, Scotland; W. E. Foggie, M.A., Dundee; J. A. Lea, Peak Forest; W. M. Selby, Wigtownshire; M. B. Steuart, Edinburgh; W. R. Strapp, Natal, and H. S. Sturrock, Fifeshire—equal; 29. John Clark, Scotland; Andrew Croll, Dundee; L. J. Howes, Natal, and S. G. Morris, Wales—equal; 33. R. M. Clark, Errol; W. Y. Grant, Dundee; R. A. M. Macleod, Sutherland-

shire ; W. B. Turnbull, Aberdeen, and J. M'Keachie Wishart, Largs—equal ; 38. T. D. Forbes, Berwick-on-Tweed ; W. A. Gray, Aberdeen ; D. S. Johnston, Inverness-shire ; J. C. Maxwell, Dundee ; J. M. Morris, M.A., Forfar, and John Macmillan, Forfarshire—equal ; 44. Thomas Evans, Larbert ; G. F. Leicester, Kent ; J. G. M'Naughton, Dundee ; A. M. M. Pringle, Aberdeenshire ; Peter Rattray Dundee, and E. J. Walker, Queensland—equal.

Second-Class Honours.—50. E. J. H. Fraser, Hull, and Malcolm M'Larty, Greenock—equal ; 52. J. F. Macphail, Skye ; 53. Wm. Bethune, Lochgelly ; Tom Pettey, Hampshire, and C. G. Thomson, Berkshire—equal ; 56. J. R. Gilmour, Edinburgh ; 57. F. P. Hearder, South Wales ; 58. J. W. Craig, Castle-Douglas, and S. W. Prowse, Prince Edward's Island—equal ; 60, James Anderson, Edinburgh ; H. P. D. A. Benson, Queensland ; A. H. Buchan, Edinburgh, and C. E. Salt, England—equal ; 64. W. B. Craig, Edinburgh ; H. M. Duncan, Kirkcaldy ; John Lawrie, Ayr ; William Mailer, Perth, and T. P. Monteath, Scotland—equal ; 69. Alex. Emslie, Edinburgh, and John M'Ivor, Stornoway—equal ; 71. Morton Burnett, Edinburgh, and Arthur Foster, Blackburn—equal ; 73. G. C. Laing, Edinburgh, and Lauchlan Rose, M.A., Blair Atholl—equal ; 75. T. B. Moore, New Brunswick ; 76. J. L. Bevans, Wisconsin, U.S.A. ; G. A. Dickson, Edinburgh ; H. B. Gladstone, London ; J. D. Gregorson, Scotland, and S. H. Hall, Carlisle—equal ; 81. J. A. Coutts, Banchory-Ternan, and E. P. Dickin, Northampton—equal ; 83. J. H. Jones, Carmarthenshire, and E. E. Waters, Sheffield—equal ; 85. J. W. Geddes, Dumfries, and T. G. Milligan, Kirkgunzeon —equal ; 87. C. J. H. Aitken, Scotland, and J. M. Menzies, Edinburgh—equal ; 89. A. G. Fenn, Madrid ; 90. C. H. Ridley, Demerara, and Daniel Smellie, Edinburgh—equal ; 92. Henry Bateson, Bolton ; 93. E. R. Dodds, London.

The following gentlemen were unavoidably absent from one examination, and are arranged in the order of merit : C. W. Branch, St Kitts ; A. J. MacDougall, Scotland ; Matthew Lawrie, Fauldhouse.

PRACTICAL ANATOMY.

Winter Session, 1889-90.

First-Class Honours.—1. J. B. Duff, Scotland, and G. C. Laing, Edinburgh—equal (*Medallists*) ; 3. H. U. Duncan, Kirkcaldy ; Thos. Gibson, Co. Tyrone ; W. A. Gray, Aberdeen, and Percy J. Henderson, Edinburgh—equal ; 7. James Anderson, Edinburgh ; Wm. Catto, Aberdeenshire ; D. S. Johnston, Inverness-shire ; J. A. Lee, Peak Forest ; James Paton, Troon, and J. B. Thomson, New Zealand—equal ; 13. J. G. Christie, Bervie ; Daniel Smellie, Edinburgh ; A. P. Steavenson, Darlington ; H. S. Walsh, Black-

burn, and R. J. T. Wright, Glasgow—equal; 18. C. W. Branch, St Kitts; R. W. Briggs, Derby; John Brown, Kelso; Charles Crerar, Maryport; Andrew Croll, Dundee; R. C. Dunn, Warwickshire; A. M. Fleming, Edinburgh; J. S. Flett, Orkney; E. J. H. Fraser, Hull; John Kippax, Lancashire; William Mailer, Perth; Andrew M'Neil, Australia; H. S. Sturrock, Fifeshire; C. G. Thompson, Berkshire, and W. B. Turnbull, Aberdeen—equal; 33. J. L. Bevans, Wisconsin, U.S.A.; S. F. Lusk, Ireland; T. B. Moore, New Brunswick; J. L. Sykes, Yorkshire, and R. K. Tandao, Agra—equal; 38. Thomas Evans, Larbert; T. A. Glover, Maxwelltown; David Murray, Hawick; J. D. Macrae, Ross-shire, and C. M. Simpson, Leslie—equal; 43. J. R. Gilmour, Edinburgh; Wm. Hewison, Orkney; John Maciver, Stornoway; R. A. M. Macleod, Sutherlandshire; Archibald Macnicol, Ayr; W. M. Selby, Wigtownshire, and G. H. Wilson, Glencorse—equal; 50. John Clark, Scotland; R. W. Cunningham, Scotland; L. J. Howes, Natal; J. G. Macnaughton, Dundee; Andrew Philip, Kirkcaldy; Lauchlan Rose, M.A., Blair Athole, and David Thomas, Dumfriesshire—equal; 57. Alexander Emslie, Edinburgh; D. M. Hutton, Liverpool; E. J. W. Ireland, Tasmania; R. O. Morris, North Wales; T. P. Monteath, Scotland; Bernard Phillips, Walsums, and Thomas Pretsell, Shotts—equal; 64. W. B. Craig, Edinburgh; J. W. Kippen, Scotland; John Macmillan, Forfarshire; J. C. Maxwell, Dundee; T. R. S. Sibbald, Dumfriesshire, and W. S. S. Titterton, Warwickshire—equal; 70. R. M. Clark, Errol; J. M. Morris, M.A., Forfar; S. S. Skinner, New Brunswick, and W. R. Strapp, Natal—equal; 74. T. A. Clinch, London; P. C. Faithfull, Cordova; Lauchlan Grant, Johnstone; T. G. Milligan, Kirkgunzeon; C. H. Ridley, Demerara; H. A. Sheffield, St John's, New Brunswick, and John Tennant, M.A., Ayr—equal.

Second-Class Honours.—81. E. P. Dickin, Northampton; W. Y. Grant, Dundee; D. A. Johnstone, Lochmaben; and Matthew Laurie, Fauldhouse—equal; 85. S. G. Morris, Wales; J. A. Coutts, Banchory-Ternan; G. C. Elliot, Nantwich; Arthur Foster, Blackburn; W. H. Mackenzie, Little Dunkeld, and A. M. M. Pringle, Aberdeenshire—equal; 91. W. D. Black, Liberton; Robert Finlay, Linlithgowshire; John Lawrie, Ayr.; G. A. Murray, Scotland; Tom Pettey, Hampshire, and E. E. Waters, Sheffield — equal; 97. Harry Armstead, Blackburn; E. C. Edwards, Woodbridge; A. H. Macpherson, Larbert: Alex. Irish, Gatehouse; S. W. Prowse, Prince Edward Island; F. T. Walmsley, Preston, and P. W. Wilkinson, Leicestershire—equal; 104. A. W. M. Auden, Church Broughton; N. G. Kerr, Ardrishaig, and Donald Smith, Mid-Calder—equal; 107. J. G. Fraser, Rossshire, and J. W. Sutcliffe, Kirkcudbright—equal; 110. J. G. Standing, Darwin; 111. W. E. Foggie, M.A., Dundee; J.

Fenton, Perth, and James Henderson, Kirkcudbright—equal ; 114. E. R. Dodds, London ; David Fairweather, Edinburgh ; J. M. Menzies, Edinburgh ; R. M. Freer, Isle of Man, and J. G. Walker, Calcutta—equal ; 118. T. C. Penfold, Brampton ; R. W. Blair, Fife, and A. H. Buchan, Edinburgh—equal ; 121. John Gilchrist, Argyleshire ; Henry Bateson, Bolton, and J. F. Macphail, Skye—equal ; 124. William Bethune, Lochgelly, and Robert M'Camon, Stranraer—equal ; 126. J. R. N. Witherspoon, Chester-le-Street ; 127. S. O. Browne, Londonderry ; 128. J. W. Geddes, Dumfries ; J. G. Kay, Darwen ; W. W. Pascoe, New Brunswick, and W. Maloy, Melbourne—equal.

THE SENIOR MACKENZIE BURSARY was awarded to C. Hubert Bond, Wiltshire, and A. O'Donoghue Rowan, London—equal. *Proxime Accesserunt*—A. P. Ross, Windsor, and D. C. Edington, Edinburgh—Special Certificates.

THE JUNIOR MACKENZIE BURSARY was awarded to H. S. Sturrock, Fifeshire, and C. G. Thompson, Berkshire—equal. *Proxime Accesserunt*—C. W. Branch, St Kitts, and R. W. Briggs, Derby—Special Certificates.

THE SENIOR "JOHN AITKEN CARLYLE" BURSARY was awarded to Percival Vincent Locke, Penang.

THE JUNIOR "JOHN AITKEN CARLYLE" BURSARY was awarded to J. P. Stewart, Edinburgh. *Proxime Accesserunt*—R. W. Briggs, Derby, and John Tennant, M.A., Ayr.

The following gentlemen acted as Prosectors to the Class :—R. E. Adamson, Cirencester ; Lim Boon Keng, Singapore ; Percival Vincent Locke, Penang ; J. Ravensworth Liddell, Portobello ; D. A. Welsh, Forfarshire.

WM. TURNER, KT., LL.D., *Professor.*

V.—INSTITUTES OF MEDICINE.

SENIOR DIVISION.

1. W. M. Brunton, Fife, and E. B. Fuller, Cape Town—equal (*Medallists*) ; 3. C. W. Chapman, Newcastle, and R. M. Leslie, Rossshire—equal ; 5. D. Macmillan, Kirkcudbright ; L. P. More, Rothwell, and R. B. Wallace, Kendal—equal ; 8. E. S. Littlejohn (B.A.), Sydney, and N. P. Watt (M.A.), Lochmaben—equal ; 10. P. St Clair More, Rothwell ; 11. D. Melville, Dundee ; 12. F. W. Mackay, Hull ; 13. C. Frier, Northallerton ; 14. J. S. Anderson, Peterhead ; 15. R. W. Gray, Scotland ; A. Ingram, Stranraer ; J. E. Moorhouse, Yorkshire, and J. W. Williams, New Zealand—equal ; 19. R. H. Armstrong, Preston ; A. Gardner, Edinburgh, and W. S. Syme, Newfoundland—equal ; 22. W. Murray, Montrose, and W. G. Putnam, Nova Scotia—equal ; 24. T. H. Bishop, England, and C. A. Sturrock, Scotland—equal ; 26. W. S. Bruce, London ; 27. G. Dickson, Dumfriesshire ; R. J.

Johnston, Edinburgh, and T. D. Walker, Canada—equal ; 30. A. M. Macdonald, Crail ; A. J. Meikle, Inveraray, and M. H. Foye, Ireland—equal.

JUNIOR DIVISION.

1. L. G. Irvine, Arbroath ; 2. G. Home, New Zealand ; 3. J. S. Norwell, Perth ; and 4. J. J. Evans, Carmarthen (*Medallists*) ; 5. R. Hutchison, Kirkliston ; 6. F. Cargill, Edinburgh ; 7. J. L. Dick, Edinburgh ; 8. A. Douglas, Northumberland ; J. D. Macmillan, Bradford, and H. Walker, Pollokshaws—equal ; 11. D. C. Edington, Edinburgh ; V. Green, Ealing, and A. G. Talbot, New Zealand—equal ; 14. W. B. Bell, Falkirk ; 15. W. A. J. Alexander, East Lothian ; A. Fells, Ramsgate, and R. B. Huxtable, New Zealand—equal ; 18. G. P. Coldstream, Lahore, India, and J. L. Russel, Mid-Lothian—equal ; 20. J. D. P. M'Latchie, Ayrshire ; G. W. F. Macnaughton, Tranent ; J. Owen, Wales, and C. Wilson, Edinburgh—equal ; 24. R. L. Guthrie, Dundee ; 25. J. V. Paterson, Sanquhar, and G. H. Hogg, France—equal ; 27. J. G. Christie, Bervie, and P. O. Malabre, Jamaica—equal ; 29. S. G. Davidson, Morayshire ; D. Fraser, North Wales, and P. V. Locke, Penang—equal ; 32. H. P. D. Benson, Queensland ; 33. R. Maxwell, Tasmania ; 34. J. F. Carruthers, Inverness ; F. H. Clayton, England ; J. P. Silver, Nova Scotia ; M. Young, Lancashire ; W. Young, Wellington (New Zealand), and T. Fentem, Derbyshire—equal.

PRACTICAL PHYSIOLOGY.

SUMMER SESSION, 1889.

FIRST-CLASS HONOURS.—1. A. Brownlie, Inverness ; 2. J. H. Crawford, Victoria ; 3. T. A. M. Wilson, Dundee (*Medals*) ; 4. J. S. Fowler, Fifeshire ; 5. W. M. Brunton, Inverkeithing ; J. E. Moorhouse, Yorkshire, and H. Walker, Pollokshaws—equal ; 8. C. W. Chapman, Newcastle, and A. Walker, Fifeshire—equal.

SECOND-CLASS HONOURS.—10. V. N. Daly, India ; L. B. Keng, Singapore, and C. Martin, Middlesborough—equal ; 13. A. F. Rosa, Edinburgh, and C. Thomson, Ireland—equal ; 15. R. Knox, Leith ; D. Macaulay, Ross-shire ; J. M'Clymont, Manchester ; W. Rogers, Cumberland, and J. Young, Dalbeattie—equal ; R. J. Johnston, Edinburgh, and D. Melville, Dundee—equal ; 22. W. C. Anderson, Forfarshire, and G. Templeton, Kilmarnock—equal ; 24. J. Pearse, Madagascar ; J. A. Rodriguez, Trinidad, and D. Wield, Ayr—equal ; 27. J. Cowan, New Galloway ; W. Fitzgerald, New Zealand ; A. S. Harriss, Calcutta ; R. Scheult, Trinidad, and B. Thomas, Wales—equal ; 32. T. B. Brierley, Tattenhall, Cheshire ; H. E. Fraser, M.A., Inverness ; W. M. M'Lean, Ross-shire ; J. Neilson, Kinross-shire, and S. A. Shiach

Elgin—equal; 37. R. S. Ferguson, Gateshead, and J. D. R. Munro, Nantwich—equal; 39. J. M'Donald, Lochee; 40. L. G. Fink, Calcutta; M. H. Foye, Co. Sligo; A. Henry, Braemar, and H. B. Knox, Hayti—equal; 44. G. F. Banardo, Madras, and W. C. Milroy, Dumfriesshire—equal; 46. G. Johnstone, Carlisle, and T. G. Mathews, Langton—equal; 48. A. H. Macmorran, Newton Stewart, and A. J. Meikle, Inveraray—equal; 50. H. S. Walker, Lincoln; 51. G. Butters, Newburgh-on-Tay; A. M'Ewan, Crieff, and S. Oddie, Pately Bridge—equal; 54. F. M. Fellows, Great Yarmouth; 55. G. B. Anderson, Dumfriesshire; A. Baxter, Edinburgh; P. V. Locke, Prince of Wales Island; T. M. Martin, Lanarkshire, and P. St C. More, Rothwell—equal; 60. J. M. M'Clew, Portpatrick; 61. W. S. Campbell, Argyleshire; J. H. Phyn, Kirriemuir, and J. Smith Dundee—equal; 64. J. Anderson, Edinburgh; G. Bell Carlisle; J. Duncan, Inchture, and H. D. Nuttall, Bradford—equal.

THE DRAWING PRIZE has been awarded to J. S. Fowler.

SPECIALLY COMMENDED FOR DRAWINGS.—G. A. Forthergill; J. C. Atkinson.

COMMENDED FOR DRAWINGS.—A. F. Rosa; P. W. Nicol.

WINTER SESSION, 1889-90.

1. S. Evans, India (*Medallist*); 2. J. S. Norwell, Perth; 3. W. Adam, Scotland, and D. C. Edington, Edinburgh—equal; 5. A. Douglas, Northumberland; 6. E. Chatelier, Madras (India); 7. S. G. Davidson, Morayshire, and W. Young, Wellington (New Zealand)—equal; 9. F. H. G. Hutchinson, India; 10. G. Dickson, Dumfriesshire; 11. A. H. Buchan, Edinburgh; 12. J. H. Murray, Montrose; 13. W. B. Bell, Falkirk, and D. M. Hutton, Liverpool—equal; 15. D. Findlay, Dundee; 16. W. A. J. Alexander, East Lothian; J. R. Higson, Ashton-upon-Ribble; G. H. Hogg, France; G. MacGibbon, Scotland, and A. J. Marshall, Linlithgow—equal; 21. R. L. Guthrie, Dundee, and C. Wilson, Edinburgh—equal; 23. M. Gillespie, Kirkcudbrightshire.

WILLIAM RUTHERFORD, M.D., *Professor.*

VI.—MATERIA MEDICA.

FIRST-CLASS HONOURS.—1. Donald Macaulay, M.A., Ross-shire; 2. E. Barnard Fuller, Cape Town; 3. George E. Clemons, Tasmania; 4. L. P. More, England; 5. Alex. Brownlie, Inverness; 6. David Wield, M.A., Ayr; and 7. William C. Milroy, Scotland (*Medallists*); 8. H. S. W. Jones, Wales; 9. J. S. Fowler, Fifeshire; 10. H. E. Fraser, M.A., Inverness; 11. E. W. Slayter, Nova Scotia; 12. W. M'Lean, Inverness; 13. John T. Wilson, Tasmania; 14. A. J. Mackintosh, Inverness-shire; William Mill, New Zealand, and W. H. Pimblett, Preston—equal; 17. James Anderson, Edinburgh.

SECOND-CLASS HONOURS.—18. W. F. Robertson, Roxburghshire; 19. Alexander Stuart, Scotland; 20. A. F. Rosa, Edinburgh, and Neish Park Watt, Lochmaben—equal; 22. L. J. Lamrock, Australia; John M'Clymont, Manchester; W. Murray, Montrose, and Reginald O. Petrie, M.A., Scotland—equal; 26. T. H. Bishop, England; 27. D. Macmillan, Kirkcudbright; Richard Davies, Hereford, and Gerald S. Walton, Wakefield—equal; 30. Samuel Edgerley, M.A., West Africa; Laurence G. Fink, India; Edmund Hay, Poland; S. A. Shiach, Elgin, and Thomas M. Wilson, Dundee—equal; 35. George Butters, Newburgh-on-Tay; 36. Walter Adam, Dingwall; James S. Anderson, Peterhead, and Alexander Hendry, Braemar—equal; 39. George Bill, Victoria; John Cowan, New Galloway; and A. Ingram, Stranraer—equal; 42. Rufus E. Evans, Stratford-on-Avon; Robert B. Huxtable, New Zealand; F. R. Van Langenberg, Ceylon, and F. Albert Rodriguez, Trinidad—equal; 46. A. Van Niekerk, South Africa; 47. Hight Blundell, London; Sidney Hillier, England; and D. J. Mackenzie, Inverness—equal; 50. D. C. Bremner, Edinburgh; M. H. Foye, Ireland; T. C. Guthrie, Edinburgh, and J. D. R. Munro, Nantwich—equal; 54. Alexander M'Ewen, Crieff; S. Oddie, Yorkshire; W. G. Putnam, Nova Scotia; W. S. Syme, Newfoundland, and R. Morris Williams, Wales—equal; 59. T. B. Brierley, Cheshire; T. Newall-Macgowan, Clifton, and R. Seheult, Trinidad—equal; 62. J. H. Crawford, Australia; 63. Samuel C. Brush, Dundee; Robert W. Gray, Scotland; Frank Grenier, Ceylon, and Alfred G. Talbot, New Zealand—equal; 67. W. Clayton Grosvenor, Glasgow, and William Rogers, Cumberland—equal; 69. E. S. Littlejohn, Sydney; 70. John A. H. Duncan, Inchture; M. Emin, India; C. J. Gomes, Demerara; J. Percy Milne, India; D. S. Morrison, Ardrishaig, and George Templeton, Kilmarnock—equal; 76. T. Ll. Parry, Wales; and John B. Scott, Fifeshire—equal; 78. Arch. Gardner, Edinburgh; J. H. G. Whiteford, Scotland, and W. H. Wilson, Whitby—equal; 81. W. S. Campbell, Scotland; 82. R. E. Adamson, Cirencester; and R. T. Michell, India—equal; 84. G. Bell Anderson, Dumfriesshire; H. D. N. Mackenzie, Somerset; and Fred. L. Pochin, Leicestershire—equal. R. Murray Leslie, M.A., B.Sc., Ross-shire, obtained 76 per cent.; Alfred Duke, Scotland, obtained 70 per cent.; and C. A. Sturrock, M.A., Scotland, obtained 60 per cent. in two of the examinations, and were unavoidably absent from the third.

PRACTICAL MATERIA MEDICA.

SUMMER SESSION, 1889.

FIRST-CLASS CERTIFICATES.—1. John Grieve, Hawick; 2. H. E. Fraser, M.A., Inverness; 3. John Cowan, New Galloway; 4. L. P. More, Rothwell (*Medals*); 5. James Anderson, M.A., Edin-

burgh ; 6. Charles Martin, Middlesborough ; 7. Alexander Brownlie, Inverness ; 8. Samuel Edgerley, M.A., West Africa ; 9. H. S. W. Jones, Wales ; 10. E. B. Fuller, Cape Town ; 11. C. W. Chapman, Newcastle-on-Tyne ; 12. R. Murray Leslie, M.A., B.Sc., Ross-shire ; 13. Alexander M'Ewan, Crieff.

SECOND-CLASS CERTIFICATES.—14. G. S. Walton, Wakefield ; 15. Alex. Baxter, Edinburgh ; 16. R. Seheult, Trinidad ; 17. T. A. M. Wilson, Dundee ; 18. Wm. C. Milroy, Dumfriesshire ; 19. J. D. R. Munro, Nantwich ; 20. D. Macmillan, Kirkcudbright ; 21. George Templeton, Kilmarnock ; 22. Edmund Hay, Poland, and John B. Scott, Fifeshire—equal ; 24. J. A. H. Duncan, Inchtyre ; 25. Alex. Stuart, Scotland ; 26. J. H. Phyn, Kirriemuir, and David Wield, M.A., Ayr—equal ; 28. Lawrence G. Fink, Calcutta ; 29. Wm. C. Anderson, Menmuir ; 30. H. B. Knox, Hayti.

WINTER SESSION, 1889-90.

SECOND-CLASS HONOURS.—W. H. Pimblett, Preston.

THOMAS R. FRASER, M.D., *Professor.*

VII.—GENERAL PATHOLOGY.

SENIOR.

SECOND-CLASS HONOURS.—F. Van Langenberg, Ceylon.

JUNIOR.

FIRST-CLASS HONOURS.—1. Donald Macaulay, M.A., Ross-shire ; 2. John T. Wilson, Australia ; 3. Alex. Brownlie, Inverness ; 4. H. S. W. Jones, Wales (*Medallists*) ; 5. Geo. E. Clemons, Tasmania, and W. M'Lean, Scotland—equal ; 7. W. C. Milroy, Scotland.

SECOND-CLASS HONOURS.—8. W. Kerr Walker, Scotland ; 9. W. Murray, Scotland ; 10. Alex. Stuart, Scotland ; 11. E. Barnard Fuller, Cape Town ; 12. L. P. More, England, and D. Macmillan, Kirkcudbright—equal ; 14. Thos. M. Wilson, Dundee ; 15. W. G. Putman, Nova Scotia ; Frank Grenier, Ceylon, and Albert F. Rosa, Scotland—equal ; 18. H. B. Hall, Leicestershire ; 19. Reginald O. Petrie, Scotland ; E. W. Slayter, Nova Scotia, and F. A. Rodriguez, Trinidad—equal ; 22. S. A. Shiach, Elgin ; 23. J. H. Crawford, Australia ; David Wield, M.A., Ayr, and R. W. Gray, Scotland—equal ; 26. L. G. Fink, India ; Eugene S. Yonge, Mauritius, and T. B. Brierley, Cheshire—equal ; 29. George Butters, Newburgh-on-Tay ; Gerald S. Walton, England ; N. Park Watt, Lochmaben ; S. Edgerley, West Africa ; John Cowan, New Galloway, and James S. Anderson, Peterhead—equal ; 35. William Mill, Scotland ; W. S. Syme, Newfoundland ; R. E. Evans, Stratford-on-Avon, and M. H. Foye, Ireland—

equal; 39. George Templeton, Kilmarnock; 40. L. J. Lamrock, Australia; H. E. Fraser, Inverness, and Frederick W. Mackay, Hull—equal; 43. R. B. Huxtable, New Zealand; James Anderson, Edinburgh, and Richard Davies, Hereford—equal. J. M'Clymont, Manchester, allowed an average on two examinations.

PRACTICAL PATHOLOGY.

Summer Session, 1889.

First-Class Honours.—1. James Dawson, India; 2. J. L. Davidson, Yetholm; 3. W. J. Walker, B.A., Port Adelaide; 4. T. M. Wilson, Dundee; 5. George Templeton, Kilmarnock (*Medals*); 6. Alex. Brownlie, Inverness, and Andrew Walker, M.A., B.Sc., St Andrews—equal; 8. Donald Macaulay, M.A., Ross-shire, and Wm. M'Lean, Ross-shire—equal; 10. Ralph S. Ferguson, Gateshead-on-Tyne; 11. R. Murray Leslie, Ross-shire, and John F. Robertson, Shetland—equal.

Second-Class Honours.—1. E. Barnard Fuller, Cape Town; 2. John Cowan, New Galloway; 3. D. Macmillan, Kirkcudbright; 4. Chas. W. Chapman, Newcastle-on-Tyne; Alex. M'Ewen, Crieff, and Wm. Carr, Wooler, Northumberland—equal; 7. H. B. Knox, Port-au-Prince, Hayti, and R. J. Johnston, Edinburgh—equal; 9. R. E. Evans, Stratford-on-Avon; Wm. C. Milroy, Dumfriesshire; H. E. Fraser, M.A., Inverness; Cuthbert Christy, England, and David Wield, Ayr—equal; 14. John B. Scott, Fife; S. H. Hartley, Bradford, and Charles Martin, Middlesborough—equal; 17. R. E. Adamson, Cirencester, and S. Oddie, Pately Bridge—equal; 19. Ahmed Mirza, Hyderabad, Deccan; Wm. Murray, Montrose, and D. J. Mackenzie, Inverness—equal; 22. H. S. Walker, Lincolnshire; J. D. R. Munro, Nantwich, and James Maclean, Dunning—equal; 25. A. M'B. Elliot, Valparaiso; T. B. Brierley, Tattenhall, Cheshire; T. G. Matthews, Loughton, and R. Knox, Leith—equal; 29. M. H. Foye, Sligo, and James Neilson, Perthshire—equal; 31. Andrew S. Smith, Glasgow, and Alex. Hendry, Braemar—equal; 33. David Melville, Dundee; 34. John Henderson, Edinburgh; John A. H. Duncan, Inchtyre, and Frank Grenier, Ceylon—equal; 37. Raoul Seheult, Trinidad; R. P. Dawson, Kinghorn, and Lawrence G. Fink, India—equal; 40. H. C. Lloyd, Melbourne; S. Edgerley, M.A., West Africa; George Butters, Newburgh-on-Tay, and G. S. Thom, Dollar—equal; 44. L. Bowman, Buckhaven; 45. Charles Friar, Northallerton, and R. H. Watson, Edinburgh—equal; 47. A. Jamieson Meikle, Inveraray; 48. R. B. Huxtable, New Zealand; 49. A. J. Mackintosh, Kingussie, and N. Philipson, Durham—equal. T. N. Macgowan, Clifton, an average on two examinations.

WINTER SESSION, 1889-90.

FIRST-CLASS HONOURS.—1. S. Evans, India (*Medallist*); 2. R. Gray, Scotland.

SECOND-CLASS HONOURS.—3. V. Werdmüller, Cape Colony; 4. George Bill, Victoria, Australia; 5. J. E. A. Chatelier, Madras; 6. M. Emin, India.

W. S. GREENFIELD, M.D., *Professor.*

VIII.—SYSTEMATIC SURGERY.

SENIORS.

FIRST-CLASS HONOURS.—1. R. M. Horne, Slamannan; 2. George Thornton, Yorkshire; 3. Wm. Paterson, Kilmarnock, and A. B. Giles, Aberdeen—equal (*Medallists*); 5. Patrick Gillies, Argyleshire; 6. George V. Lockett, West Indies; 7. W. D. Rankine, Canada.

SECOND-CLASS HONOURS.—8. John R. Burnett, Carlisle; 9. J. D. Gray, Comrie; 10. R. M. Ronaldson, Ireland; 11. John J. Cowan, Musselburgh; 12. Maurice A. Wilson, Bradford; 13. A. J. Dearden, Lancashire; 14. A. H. Walker, Arbroath; 15. H. M. Chasseaud, Smyrna; 16. Dugald M'Laren, Edinburgh; 17. J. G. Kershaw, Oldham; 18. Robert Scott, Fife; 19. F. T. Foster, New Zealand; 20. James B. Young, Edinburgh; 21. J. C. Palmer, New Zealand; 22. W. F. C. Lowson, Forfar; 23. David Pryde Young, Edinburgh; 24. J. Lawson Williams, Wigtownshire; 25. T. W. Mitchell, Ross-shire; 26. H. R. Lloyd Davies, Liverpool; 27. D. S. Dixson, Hong-Kong; 28. J. T. M'Kay, Dumfries; 29. H. N. D. Milligan, Bradford; 30. W. H. Boazman, Kelso; 31. J. Maclagan Reid, Montrose; 32. A. S. Duncan, Montrose; 33. H. C. Evison, Milnthorpe; 34. H. Hearsey, India; 35. A. W. Williams, Easden; 36. Percy A. Nightingale, Cape Colony; 37. E. M. Steven, Montrose; 38. J. L. Macrae, Madras; 39. A. K. Thomson, Australia; 40. R. S. Ross, Netley Bridge; 41. J. L. Rubidge, Cape Colony; 42. R. E. Harrold, Australia; 43. Thomas Lawson, Huntly; 44. T. R. Henderson, M.A., Dumfries; 45. J. C. Rossie, Stromness; 46. J. V. Hulme, Staffordshire; 47. F. T. Griffin, Southampton; 48. Roland J. Pope, Australia.

JUNIORS.

FIRST-CLASS HONOURS.—1. Robert Hutchison, Edinburgh; 2. Louis G. Irvine, Arbroath; 3. Hugh Walker, M.A., Pollokshaws; 4. Alfred G. Talbot, New Zealand (*Medallists*); 5. J. J. Evans, Carmarthen; 6. Arthur Fells, Ramsgate; 7. John D. M'Millan, Kinross; 8. John M'Laren, Edinburgh; 9. Douglas C. Watson, Mid-Calder; 10. P. O. Malabre, Jamaica; 11. George Newman,

Leominster; 12. Lim B. Keng, Singapore; 13. Percival V. Locke, Penang; 14. James H. Murray, Montrose; 15. James M'Donald, Lochee.

SECOND-CLASS HONOURS.—16. Raymond Maxwell, Tasmania; 17. William Scott, Laurencekirk; 18. Alexander C. Ainslie, Edinburgh; 19. S. G. Davidson, M.A., Morayshire; 20. George Dickson, Lockerbie; 21. James Maclean, Dunning; 22. George W. F. Macnaughton, Tranent; 23. George Probyn Coldstream, India; 24. James B. Shaw, Dalbeattie; 25. Meredith Young, Lancashire; 26. A. W. Anderson, St Andrews; 27. Thomas Fentem, Derbyshire; 28. R. M. Matheson, Edinburgh; 29. C. Hubert Bond, Wiltshire; 30. Lloyd J. H. Oldmeadow, Tasmania; 31. Daniel Charles Edington, Edinburgh; 32. Alexander R. Moon, Dundee; 33. James Lawson Russell, Mid-Lothian; 34. R. L. Guthrie, Dundee; 35. David B. Hewat, Cape Town; 36. John Owen, Aberystwyth; 37. Walter M. Robertshaw, Yorkshire; 38. Adam Richardson, Roxburghshire; 39. William Anderson, Menmuir; 40. D. H. Beegling, New South Wales; 41. H. P. Bennett, Yorkshire; 42. T. George Sloan, M.A., Edinburgh; 43. William Young, New Zealand; 44. W. Bruce Bell, Falkirk; 45. D. H. Burn, Arbroath; 46. John Russell Higson, Ashton-upon-Ribble; 47. H. D. Mackenzie, Somerset; 48. F. H. A. Clayton, London; 49. John D. Duncan, Arbroath; 50. John W. Craig, Castle-Douglas; 51. Murray Gillespie, Kirkcudbrightshire; 52. C. Parker, Tasmania; 53. Oswald D. Robson, Calcutta; 54. W. A. J. Alexander, Edinburgh; 55. J. F. Carruthers, Inverness; 56. John W. Hyslop, Leven; 57. W. Duncan Lawrie, Bradford; 58. J. D. P. M'Latchie, Lanark; 59. George H. Dupont, Grantham; 60. Arthur Macintosh, Inverness; 61. Charles Nelson, Edinburgh; 62. J. Clark Wilson, Ayr; 63. D. Reid Crow, Argyleshire; 64. Alexander Douglas, M.A., Northumberland; 65. Robert Proudfoot, Dumfriesshire; 66. J. Lawson Dick, Edinburgh; 67. J. R. Armstrong, North Wales; 68. W. B. Gow, Crieff; 69. A. C. Matchett, Halesworth; 70. J. Donald Pollock, Galashiels; 71. Frank H. G. Hutchinson, India; 72. George Halley, Dundee; 73. J. Ernest Moorhouse, Huddersfield; 74. G. B. Matheson, Musselburgh; 75. R. W. Loveridge Scott, Kinross-shire; 76. Charles P. Stewart, Perth; 77. Charles Thomson, India; 78. T. B. Barber, Africa; 79. Edward L. Phillips, Taunton; 80. Charles Tyrie, Pitlochrie; 81. Cuthbert Thomson, Londonderry; 82. W. A. Dubourg, Edinburgh; 83. Robert Ballantine, Wigtownshire; 84. T. Farthing, County Durham; 85. Richard Kenyon, Islay; 86. George M. Munro, Inverness; 87. F. Lishman, Durham; 88. Walter Simpson, Edinburgh; 89. F. J. du Toit (B.A.), Cape of Good Hope; 90. Alfred Cowper, Kirkcudbrightshire; 91. James Wood, Burntisland; 92. George J. Awburn, Morpeth; 93. L. B. Beddie,

Aberdeen ; 94. Charles S. Glegg, Edinburgh ; 95. W. C. Hamilton, New Zealand ; 96. George F. Longbotham, Middlesborough ; 97. P. W. M'Vean, Perthshire ; 98. George Peterkin, Dingwall ; 99. W. A. Rutherford, Yorkshire ; 100. William E. Smith, Dumfries ; 101. James H. Welsh, Kinghorn.

PRACTICAL SURGERY.

SENIORS.

First-Class Honours.—1. J. C. Palmer, New Zealand, and William Paterson, Kilmarnock—equal (*Medallists*); 3. G. Vernon Lockett, West Indies; 4. J. D. Gray, Comrie ; 5. D. P. Young, Edinburgh ; 6. J. R. Burnett, Carlisle ; 7. T. Griffin, Southampton ; 8. J. V. Hulme, Staffordshire ; 9. J. G. Kershaw, Oldham ; 10. P. A. Nightingale, Cape Colony ; 11. R. M. Ronaldson, Ireland ; 12. J. L. Rubidge, Cape Colony ; 13. R. Strachan, Arbroath.

Second-Class Honours.—14. D. G. Campbell, Argyleshire ; 15. C. J. Van Coller, South Africa ; 16. A. S. Duncan, Montrose ; 17. R. E. Harrold, Adelaide ; 18. T. R. Henderson, Dumfries ; 19. R. M. Horne, Slamannan ; 20. J. L. Macrae, Madras ; 21. J. T. Mackay, Dumfries ; 22. T. W. Mitchell, Ross-shire ; 23. R. J. Pope, Australia ; 24. J. L. Reed, Australia ; 25. J. M. Reid, Montrose ; 26. A. H. Walker, Arbroath ; 27. A. W. Williams, London ; 28. A. K. Thomson, Australia ; 29. M. A. Wilson, England ; 3. J. Younan, India.

DAVID WALLACE, M.B., *Demonstrator.*

JUNIORS.

First-Class Honours. — 1. J. Maclean, Dunning, and L. J. H. Oldmeadow, Tasmania—equal (*Medallists*) ; 3. Vincent Green, Ealing ; 4. C. Parker, Tasmania ; 5. R. Proudfoot, Dumfriesshire ; 6. W. A. Rutherford, Yorkshire ; 7. D. R. Crow, Argyleshire ; 8. J. L. Dick, Edinburgh ; 9. T. Farthing, Co. Durham ; 10. G. Phillips, China ; 11. H. Walker, Scotland ; 12. W. B. Gow, Crieff ; 13. C. S. Glegg, Edinburgh ; 14. R. Kenyon, Islay ; 15. G. W. F. Macnaughton, Tranent ; 16. P. O. Malabre, Jamaica ; 17. J. H. Murray, Montrose ; 18. G. Peterkin, Dingwall ; 19. W. M. Robertshaw, Yorkshire ; 20. A. H. H. Sinclair, Kenmore ; 21. D. C. Watson, Mid-Calder ; 22. William Young, New Zealand ; 23. T. G. Sloan, M.A., Edinburgh.

Second-Class Honours.—24. J. R. Armstrong, North Wales ; 25. C. H. Bond, Wiltshire ; 26. T. B. Barber, Africa ; 27. D. H. Burn, Arbroath ; 28. J. W. Craig, Castle-Douglas ; 29. H. D. Coles, England ; 30. J. D. Duncan, Arbroath ; 31. G. H. Dupont, Grantham ; 32. D. C. Edington, Edinburgh ; 33. Murray

Gillespie, Kirkcudbrightshire; 34. W. C. Hamilton, New Zealand; 35. R. Hutchinson, Edinburgh; 36. J. R. Higson, Ashton-upon-Ribble; 37. C. Kingdon, England; 38. P. V. Locke, Penang; 39. W. D. Lawrie, Bradford; 40. C. K. Millard, England; 41. James M'Donald, Lochee; 42. G. Newman, Leominster; 43. J. Penny, Cumberland; 44. A. Rodger, Edinburgh; 45. J. L. Russell, Midlothian; 46. W. Scott, Laurencekirk; 47. M. Sandeman, Lanarkshire; 48. R. W. L. Scott, Kinross-shire; 49. C. Tyrie, Pitlochrie; 50. Cuthbert Thomson, Londonderry; 51. A. G. Talbot, New Zealand; 52. J. C. Wilson, Ayr; 53. M. Young, Lancashire; 54. Charles Thomson, India.

HAROLD J. STILES, M.B., *Demonstrator.*

Mr Walter Simpson and Mr J. J. Hedley Wood acted as Class Assistants.

JOHN CHIENE, M.D., *Professor.*

IX.—MIDWIFERY.

SENIOR DIVISION.

First-Class Honours.—1. Carstairs C. Douglas, Kirkcaldy, and A. S. Duncan, Montrose (*Medallists*); 3. Patrick H. Gillies, Argyleshire; 4. H. N. D. Milligan, Bradford; 5. George Thornton, Yorkshire; 6. Thomas R. Henderson, Dumfries; 7. J. C. Rossie, Orkney; 8. J. Edmondson, Wigan.

Second-Class Honours.—9. J. Maclagan Reid, Montrose; 10. F. J. M'Kettrick, Lochmaben, and Robert Scott, Fife—equal.

Present at two examinations, and obtained, an average:—Gerald Fitzgerald, Scotland; James T. Mackay, Dumfries.

JUNIOR DIVISION.

First-Class Honours.—1. R. M. Horne, Slamannan; 2. George Hennan, Mid-Calder, and W. S. Kerr, Dumfries—equal; 4. Wm. Paterson, Kilmarnock (*Medallists*); 5. William Hutton, Berwickshire; 6. G. Vernon Lockett, West Indies, and C. M. Ormsby, Jamaica—equal; 8. J. Howard Jones, Carmarthenshire; 9. John Francis, Plymouth; J. D. L. Macalister, Scotland; Charles Macmaster, Glasgow, and Murdo Rose, Inverness—equal; 13. C. J. W. Dixon, Appleby, and James Milne Hermon, Aberdeen—equal; 15. D. H. Balfour, Bo'ness, and James B. Young, Edinburgh—equal; 17. W. Iverach Robertson, Lauder, and David Pryde Young, Ayrshire—equal; 19. A. J. M'Closky, Penang; 20. W. Kerr Walker, Scotland; 21. A. E. S. Jack, Ross-shire; 22. E. H. Alexander, New Zealand; James Acworth Menzies, Scotland; and Sidney R. Webb, London—equal; 25. H. Hearsey, India; 26. G. H. Monro, New Zealand, and Alex-

ander Thomson, Arbroath—equal ; 28. Robert M. Fenn, Madrid ; 29. P. Thornton, Fauldhouse ; 30. John J. Cowan, Scotland ; 31. T. A. Green, Yorkshire, and R. U. Moffat, Cape Colony—equal ; 33. A. Winkelried Williams, England ; 34. R. Durward Clarkson, Glasgow ; W. B. Drummond, Edinburgh ; T. W. Mitchell, Rossshire, and William Simmers, M.A., Dundee—equal ; 38. J. M. M. Kay, Castle-Douglas ; T. Shennan, Bathgate, and Robert Strachan, Arbroath—equal ; 41. W. Ogilvy Ramsay, Forfarshire, and Maurice A. Wilson, England—equal ; 43. Wakefield MacGill, Musselburgh, and Thomas Steele, Fauldhouse—equal ; 45. H. M. Chasseaud, Smyrna; Alexander Mitchell, Banffshire; R. S. Stephenson, Tasmania ; David Stuart, Strathspey, and J. E. Thomas, North Wales—equal.

Second-Class Honours. — 50. M. A. Bamby, Bangalore ; Hugh Bennett, Plymouth, and Herbert F. Malabre, Jamaica—equal ; 53. W. D. Rankin, Canada, and J. D. Williams, Carnarvon—equal ; 55. T. Stevenson Balfour, Edinburgh, and E. C. Moore, Bristol—equal ; 57. William Carmichael, Edinburgh, and O. F. Evans, Anglesea—equal ; 59. Angus G. Macdonald, Keith ; 60. F. L. Brown, Pau, France, and R. Lamb, New Zealand—equal ; 62. Charles D. Sutherland, Aberdeenshire ; 63. J. R. Burnett, Carlisle, and C. J. Van Coller, South Africa—equal ; 65. A. J. M'Callum, Banff, and P. W. Schmidt, Bradford—equal ; 67. J. A. Dick, Windsor, N.S.W.; Harry Rainy, M.A., Glasgow, and J. B. Robertson, Greenock—equal ; 70. James L. Fenton, Australia, and R. J. E. Young, Edinburgh—equal ; 72. Alexander Cameron, West Indies ; C. Cochrane, Worcester, and Walter Sansom, Lancashire — equal ; 75. F. T. Griffin, Southampton ; A. G. Robertson, Edinburgh, and Arthur H. Walker, Arbroath—equal ; 78. Richard J. A. Berry, England ; 79. Edward Millar Steven, Montrose ; 80. F. R. Mallett, England ; 81. J. E. Thomson, England, and John Williams, S. Wales—equal ; 83. T. Owen Jones, Carnarvonshire, and R. J. Pope, Australia—equal ; 85. H. R. L. Davies, Liverpool ; Rob. A. Fryer, Warwick ; A. Charles E. Gray, Edinburgh ; H. V. M'Kenzie, Bombay ; David Rorie, Edinburgh ; and J. Y. S. Young, Edinburgh — equal ; 91. E. Valentine-Gibson, England ; 92. A. K. Thomson, Melbourne ; 93. John Maclaren, Glasgow ; 94. John Livingstone, Perth ; 95. Rowland E. Harold, Adelaide ; 96. J. Panton, Blair Athole ; 97. P. Hamilton Boyden, Birmingham ; E. H. Gonin, Brighton ; J. L. Rubidge, Cape Colony ; Charles Stuart, Perth ; and D. Young, Adelaide — equal ; 102. Duncan M'Neill, Campbeltown ; Fred M. T. Skae, Larbert ; and A. J. Webster, Lincoln—equal ; 105. E. B. Garland, Derby, and A. S. Miller, Wick—equal ; 107. A. D. M. Grant, Sutherlandshire ; 108. P. A. Nightingale, Cape Colony ; 109. Henry J. Mackenzie, Dundee ; 110. John Joakim, Singapore.

Present at two Examinations, and obtained average — W. H. Bunting, Accrington; R. Murray Lyon, Ayr; W. Griffith, Milford Haven.

OPERATIVE MIDWIFERY AND GYNECOLOGY.

Summer Session, 1889.

First-Class Honours.—1. E. G. Pilgrim, Barbados (*Medallist*); 2. George Wilkinson, York; 3. H. L. Gordon, Cumberland; 4. James Lackie, Montrose; 5. A. Wheeler, Melbourne, and Alfred W. Campbell, Australia—equal; 7. W. O. Meek, Wigan.

Second-Class Honours.—8. F. N. Stewart, Fife; 9. Charles G. Macleod, Fifeshire; 10. R. M. Beattie, Melbourne.

A. R. SIMPSON, M.D., *Professor.*

X.—PRACTICE OF PHYSIC.

Senior Division.

1. C. Carstairs Douglas, Kirkcaldy; 2. Gerald Fitzgerald, Scotland; 3. George Thornton, England (*Medallists*); 4. John Spurway, Kidderminster; 5. P. H. Gillies, Argyleshire, and Sidney R Webb, London—equal; 7. D. G. Douglas, Edinburgh; 8. Harry G. Melville, Edinburgh; 9. Walter Dickson, Stirling; William Currie, Ayrshire, and William Paterson, Kilmarnock—equal; 12. D. M'Laren, Edinburgh; 13. D. S. Dixson, Hong-Kong, and R. Miller Ronaldson, Ireland—equal; 15. John D. Gray, Comrie; James S. Y. Rogers, Forfarshire; and W. C. W. Stain, England —equal; 18. H. M. D. Milligan, Bradford; 19. J. Maclagan Reid, Montrose; 20. W. H. Boazman, Kelso; and John Francis, Plymouth—equal; 22. J. Maxwell Wood, Dumfries; 23. J. B. Marshall, Edinburgh; 24. Frederick Atkinson, Madras; William D. Forsyth, Scotland; and J. Lawson Williams, Newton-Stewart —equal; 27. R. M. Beattie, Melbourne; 28. John Bruce, Kelso; William Carmichael, Edinburgh; John W. Dowden, Dublin; Samuel Fleming, Edinburgh; Henry J. Mackenzie, Dundee; John A. Robertson, Berwickshire, and Alexander Rutherford, Dumfries—equal; 35. H. C. Evison, England; James T. M'Kay, Dumfries; Allan F. Rutherford, Dumfries, and L. S. Senhouse, Barbados—equal; 39. J. C. Rossie, Orkney; 40. E. H. Gonin, Brighton; 41. F. J. M'Kettrick, Lochmaben; 42. W. J. Shaw, Scotland; 43. A. Irby Webster, Lincolnshire, and R. Sturgis White, London—equal.

Absent from one Examination (arranged in order of merit)—George V. Lockett, St Vincent; A. J. Dearden, Lytham; Alexander Henderson, Aberdeen; F. R. Turton, Wolverhampton.

JUNIOR DIVISION.

1. A. Charles E. Gray, Edinburgh, and Robert M. Horne, Slamannan —equal; 3. James Currie, Roxburghshire; 4. James B. Young, Edinburgh; 5. Harry Rainy, Glasgow, and C. D. Sutherland, Aberdeenshire—equal (*Medallists*); 7. W. B. Drummond, Edinburgh, and J. D. L. Macalister, Fifeshire—equal; 9. R. D. Clarkson, Glasgow, and J. J. Cowan, Scotland—equal; 11. Robert J. Ashton, Calcutta, and Sidney A. Gibbs, New Zealand—equal; 13. Wakefield MacGill, Musselburgh; 14. William S. Kerr, Dumfries, and Alexander Thomson, Arbroath—equal; 16. Robert M. Fenn, Madrid; Claude B. Ker, Cheltenham, and H. V. Mackenzie, Bombay—equal; 19. W. D. Rankin, Canada; Arthur H. Walker, Arbroath; A. Winkelried Williams, Nearden, and George Wilson, Berwickshire—equal; 23. F. L. Brown, France; Charles Macmaster, Glasgow, and William Simmers, Scotland—equal; 26. Albert H. Horden, Brecknockshire, and E. C. Moore, England—equal; 28. C. M. Ormsby, Jamaica; J. Begg Robertson, Greenock; and John Williams, Wales—equal; 31. Thomas Steele, Fauldhouse; 32. E. H. Alexander, New Zealand; Richard J. A. Berry, Upholland, and C. J. W. Dixon, Appleby—equal; 35. O. F. Evans, Wales; C. Norman Hamper, Clifton; T. W. Mitchell, Ross-shire, and G. H. Monro, New Zealand—equal; 39. J. R. Burnet, Carlisle; J. A. Green, Yorkshire; James Milne Hermon, Aberdeen; William M. Hutton, Berwickshire; and James Wilkie, Newburgh—equal; 44. A. E. S. Jack, Ross-shire; R. Murray Lyon, Ayr; R. U. Moffat, S. Africa; R. Strachan, Arbroath, and J. D. Williams, Carnarvon—equal; 49. Hugh Bennet, Plymouth; Robert Lamb, New Zealand, and Murdo Rose, Inverness—equal; 52. Robert A. Fryer, Warwick; J. H. Hearsey, India; Angus G. Macdonald, Keith; Percy A. Nightingale, Cape Colony, and H. T. Thomson, Edinburgh—equal; 57. Alexander Mitchell, Banffshire; 58. H. M. Chasseaud, Smyrna; Claude B. Martin, Exeter; J. Acworth Menzies, Fifeshire; Cecil Palmer, New Zealand; J. E. Thomas, N. Wales, and D. D. Tyndal, Montrose—equal; 64. F. T. Foster, New Zealand; J. Howard Jones, Carmarthenshire; T. W. Parkinson, New Zealand; William Iverach Robertson, Lauder, and David P. Young, Ayrshire—equal; 69. H. M. MacGill, Musselburgh; and J. R. P. Lambert, Eastbourne—equal; 71. Frederick Gourlay, Edinburgh; John Livingstone, Perth; and J. E. Thomson, England—equal; 74. David Rorie, Edinburgh; F. M. T. Skae, Larbert; and Peter Thornton, Fauldhouse—equal; 77. James D. C. Allen, Cheshire; D. H. Balfour, Bo'ness; T. Shennan, Linlithgowshire; David Stuart, Strathspey; and Richard J. E. Young, Edinburgh—equal; 82. T. Stevenson Balfour, Edinburgh; Rolland E. Harrold, S. Australia; J. M. M. Kay, Castle-Douglas; R. E. Little, Eccle-

fechan, and A. S. Miller, Wick—equal; 87. John Joakim, Singapore; John L. Rubidge, Cape Colony, and J. B. Smith, Montrose—equal.

Absent from one Examination (arranged in order of merit)—W. H. Bunting, Accrington; James A. Murison, India; R. J. Pope, Australia; Samuel Maclean, Edinburgh, and A. Stodart Walker, Birkenhead—equal.

T. GRAINGER STEWART, M.D., *Professor.*

XI.—MEDICAL JURISPRUDENCE.

Summer Session, 1889.

First-Class Honours.—1. William Paterson; 2. J. Howard Jones; 3. J. D. L. Macalister (*Medals*); 4. T. H. Milroy; 5. W. S. Kerr; 6. Wm. Currie; 7. George B. Marshall; 8. George Elder and Alexander Thomson—equal.

Second-Class Honours.—9. R. M. Horne, J. D. Robson, and T. Shennan—equal; 10. Murdo Rose, M.A.; 11. J. E. Thomson; 12. Wm. M. Hutton; 13. John Grieve; 14. T. F. Macdonald and Henry J. Glover—equal; 15. Robert M. Fenn; 16. W. B. Drummond; 17. F. T. Foster and H. J. Mackenzie—equal; 18. Sidney A. Gibbs and J. A. Menzies—equal; 19. A. E. S. Jack; 20. Peter Thornton; 21. E. R. Monnier; 22. C. J. W. Dixon; 23. W. Iverach Robertson; 24. E. H. Alexander, Thomas Steele, and John Williams—equal; 25. R. D. Clarkson; 26. R. Elliot Little and Maurice A. Wilson—equal; 27. Wm. Wood and M. Mackay—equal; 28. T. Owen Jones and T. W. Parkinson—equal; 29. C. M. Ormsby; 30. John Sharp; 31. A. Stodart Walker and A. W. Williams—equal; 32. R. E. Harrold and H. Hearsey—equal; 33. P. M. Kyle; 34. L. W. Young.

SPECIAL COURSE IN PUBLIC HEALTH.

First-Class Honours.—1. James Roberton Christie, M.A.; 2. R. M. Horne (*Medallists*); 3. William Paterson; 4. J. Howard Jones; 5. Carstairs C. Douglas; 6. Murdo Rose; 7. R. M. Beattie and William Currie—equal; 9. T. H. Milroy; 10. E. H. Alexander, A. J. Dearden, George B. Marshall, and J. E. Thomson—equal.

Second-Class Honours.—14. J. F. M'Kettrick; 15. Thomas Steele; 16. John W. Bone and W. S. Keir—equal; 18. J. D. L. Macalister and Alexander Thomson—equal; 20. W. B. Drummond and G. L. L. Lawson, M.R.C.S.—equal; 22. John D. Gray, Herbert F. Malabre, Peter Thornton, and James Younan—equal; 26. D. H. Balfour, Alex. Dunbar, R. E. Little, A. J. M'Callum,

and James Acworth Menzies—equal; 31. H. M. Chasseaud, D. G. Douglas, and John Williams—equal; 34. Allan F. Rutherford; 35. W. H. Bunting, C. J. W. Dixon, Robert M. Fenn, and Walter Sansom—equal; 39. George Vernon Lockett; 40. J. M'Call Morrison and John A. Robertson—equal; 42. T. R. Henderson and Wakefield MacGill—equal; 44. R. D. Clarkson, W. M. Hutton, Angus Graham Macdonald, J. Cecil Palmer, T. Shennan, and J. M. Wood—equal; 50. Samuel Elliot, J. M'K. M'I. Kay, and James T. Mackay—equal; 53. C. M. Ormsby and A. Winkelried Williams—equal; 55. Henry J. Mackenzie and George H. Monro—equal; 57. George D. Darlington and John Webster—equal.

DOUGLAS MACLAGAN, Kt., M.D., *Professor.*

XII.—CLINICAL SURGERY.

First-Class Honours.—1. John Anderson, Shetland; 2. Andrew Walker, Fifeshire; 3. R. Murray Leslie, Ross-shire, and William Murray, Montrose—equal; 5. Lawrence G. Fink, India (*Medallists*); 6. John B. Scott, Fifeshire; 7. Gerald S. Walton, Wakefield, and William Wood, England—equal; 9. R. M. Williams, Wales; 10. John M'Clymont, Dalbeattie; 11. George Templeton, Kilmarnock.

Second-Class Honours.—12. John Bruce, Kelso, and Albert F. Rosa, Edinburgh—equal; 14. R. Lamb, New Zealand; 15. Frederick W. Mackay, Hull; 16. Walter Adam, Dingwall; Samuel Edgerley, W. Africa, and Alexander M'Ewan, Crieff—equal; 19. William Rogers, Cumberland; 20. John F. Crombie, North Berwick; 21. John A. H. Duncan, Inchture; Charles Macmaster, Glasgow; and J. G. Smith, Dundee—equal; 24. William Robertson, Newcastle; 25. Daniel Campbell, Scotland; F. Albert Rodriguez, Trinidad, and Thomas D. Walker, Canada—equal; 28. James Miller, Stirlingshire, and C. A. Sturrock, M.A., Scotland—equal; 30. J. Gordon Leslie, Scotland; 31. Thomas M. Martin, Scotland, and Reginald O. Petrie, M.A., Dundee—equal; 33. F. W. Langton, B.A., New South Wales; and James H. G. Whiteford, Edinburgh—equal; 35. William C. Anderson, Scotland, and David Melville, Dundee—equal; 37. Samuel C. Brush, Dundee, and Harry Weightman, Arbroath—equal; 39. George Butters, Newburgh-on-Tay, and H. D. N. Mackenzie, Somerset—equal; 41. G. S. Thom, Dollar; 42. R. P. Dawson, Scotland.

THOMAS ANNANDALE, M.D., *Professor.*

XIII.—MENTAL DISEASES.

SUMMER SESSION, 1889.

FIRST-CLASS HONOURS.—1. Arthur W. Carter, Cape Colony; R. H. Whitwell, M.B., C.M., Indian Medical Service (*Medals*); 3. J. Morton Ritchie, Edinburgh; 4. James B. Bird, M.B., Berwickshire; 5. Matthew L. Hewat, Cape Colony; 6. J. Douglas Stanley, Ireland; 7. Gerald Fitzgerald, Scotland, and T. R. Henderson, Dumfries—equal; 9. D. A. Fraser, M.B., Scotland, and R. Renton, M.B., Scotland—equal; 11. H. G. Langwill, Currie, and H. M. Eames, England—equal; 13. Dr W. D. Stewart, Bayal; 14. John W. Dowden, Dublin.

SECOND-CLASS HONOURS.—15. Alexander Rutherford, Scotland; 16. Allan F. Rutherford, Scotland; 17. R. J. Pirie, Dundee; 18. James R. Stein, Armagh, and George Hennan, Edinburgh—equal; 20. Fred. Watson, M.B., Dundee; 21. W. J. Gregory, Donegal.

T. S. CLOUSTON, M.D., *Lecturer.*

XIV.—DISEASES OF THE EYE.

SUMMER SESSION, 1889.

FIRST-CLASS HONOURS.—1. Thomas Gordon, M.A., M.B.; and 2. G. M. Cullen (*Medals*); 3. Alexander Rutherford; 4. D. H. Balfour; 5. Angus G. MacDonald and H. M. Inglis—equal; 7. F. Watson.

SECOND-CLASS HONOURS.—8. V. O. Taylor; 9. A. F. Rutherford, J. W. Dowden, and S. G. Connor—equal; 12. W. D. Stewart.

D. ARGYLL ROBERTSON, M.D., *Lecturer.*

Examination Papers for Degrees in Medicine.

PRELIMINARY EXAMINATION FOR DEGREES IN MEDICINE AND SCIENCE.

I. ARITHMETIC.

Tuesday, 1st October 1889.—9 *to* 11 *o'clock.*

1. Multiply 13 tons 5 cwt. 3 qrs. 11 lbs. by 24.
2. Reduce the fraction $\frac{2}{3}\frac{6}{3}\frac{2}{8}\frac{2}{1}$ to its lowest terms.
Write down all the prime factors of 10269.
3. Find the value of
   (1) $1\frac{1}{3}$ of $2\frac{1}{4}$ of $3\frac{1}{5}$.
   (2) $1\frac{1}{3} + 2\frac{1}{4} + 3\frac{1}{5}$.

4. Multiply 183·026 by 1·000999 correctly to four decimal places.

5. A cup contains ·6435 litre. How often must it be filled to obtain 1500 litres of liquid at the least?

6. Express 1 farthing as the decimal of £1, correct to three decimal places.

Find the decimal of a shilling which differs from 1 penny by less than the millionth part of 1 shilling.

7. Divide £16, 17s. 6d. into four parts, proportional to $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, and $\frac{1}{6}$.

8. If a sum of money be lent on 1st October of the present year at $3\frac{1}{4}$ per cent. simple interest, in what year will the total interest first exceed the capital sum?

9. Find the discount on £690, 4s., due six months hence, at 3 per cent. simple interest.

10. A grocer buys twice as much black tea as green, giving 2 shillings a lb. more for the green than the black; he mixes the whole and retails it at 5s. a lb., gaining 5 per cent. on his outlay. What did he give for each sort of tea?

Tuesday, 4th March 1890.—9 *to* 11 *o'clock.*

1. Find the price of 136 tons 14 cwt. at £1, 12s. 6d. per cwt.

2. Express in powers of their prime factors 750, 2880, and 10800, and thence find their G.C.M. and L.C.M.

3. Simplify the following fractions:—

(1) $\frac{2}{7} - \frac{5}{8} + \frac{3}{4} - \frac{2}{2}\frac{3}{5}$.

(2) $2 + \cfrac{1}{2 + \cfrac{1}{2 + \frac{1}{2}}}$

4. Find the product of ·18536472 and 2·1365489 correct to four places of decimals.

5. Find a decimal fraction which differs from $\frac{5}{1\frac{1}{2}}$ by less than the millionth part of unity.

Reduce 13s. $1\frac{1}{2}$d. to the decimal of £1.

6. A map is $6\frac{1}{4}$ inches in length, and $4\frac{3}{5}$ inches in breadth, and the scale is $\frac{1}{8}$ inch to the mile. How many square miles of surface does the map represent?

7. By selling cloth at 9d. per yard there is a loss of 5 per cent. At what price per yard should it have been sold to gain 14 per cent.?

8. What will £4000 amount to in three years at compound interest of 4 per cent., payable annually?

9. Find the true discount on £664 due ten months hence at $4\frac{1}{2}$ per cent. simple interest.

10. Divide £278, 15s. 6d. amongst *A*, *B*, and *C*, so that *A's* share is to *B's* as 3 to 4, and *B's* to *C's* as 5 to 6.

II. ELEMENTARY MATHEMATICS.

Tuesday, 1*st October* 1889.—11.30 *to* 1.30 *o'clock.*

1. Define a right angle.

At any point of a given straight line draw another straight line at right angles to it.

2. If a parallelogram and a triangle be upon the same base and between the same parallels, the triangle is half of the parallelogram.

What is the area of an equilateral triangle, each of whose sides is equal to one foot?

3. The straight line AB is bisected at C and produced to D; show that

$$AD \cdot DB = \overline{CD}^2 - \overline{CB}^2.$$

4. In the same circle or in equal circles, equal chords are equally distant from the centre; and of two unequal chords the greater is nearer to the centre than the less.

What is the locus of the points of bisection of equal chords in a circle?

5. On a given straight line describe a segment of a circle containing a given angle.

6. Arrange in ascending powers of x the product

$$(1+x)^3(1-x)^2,$$

and find the coefficient of x^4 in $(1+x-x^2)^4$.

7. Find the remainder when x^2-2x-3 is divided by $x-1$.

Resolve into factors

(1) $2x^2 - 5x - 3$

(2) $(x+y)^3 - (x-y)^3$.

8. Simplify the fractions

(1) $\dfrac{1}{(x-2)^2} - \dfrac{1}{(x-1)^2} - \dfrac{1}{x^2-3x+2}$.

(2) $\dfrac{x^3+1}{x^4+x^2+1}$.

9. Solve the equations

(1) $\dfrac{x+1}{2} - \dfrac{x-1}{3} = x$

(2) $\begin{cases} x+2y = 1\frac{1}{4} \\ 2x+y = 1. \end{cases}$

10. A square patch of corn is reaped by a machine which cuts down a belt 4 feet wide from the outside in each circuit. The amount cut down in the twelfth circuit is exactly half of that cut down in the first. What was the size of the patch?

Tuesday, 4th March 1890.—11.30 *to* 1.30 *o'clock.*

1. Draw a straight line to bisect a given rectilineal angle. Show that any point on the line of bisection is equidistant from the straight lines containing the given angle.

2. Define parallel straight lines, and show that if a straight line cut two parallel straight lines, it makes the alternate angles equal to one another.

3. State and prove Euclid's proposition respecting the squares on the sides of an obtuse-angled triangle.

A rhombus is formed by describing two equilateral triangles on opposite sides of the same base. Show that the square on one diagonal is three times that on the other.

4. Given two chords in a circle, show how to determine the centre. Enunciate the propositions required in your construction.

5. A straight line is drawn from a point O, outside a circle, cutting the circle in P and Q, show that the rectangle $OP.OQ$ is constant, and equal to the square of the tangent from O to the circle.

6. Expand and arrange in powers of x the product

$$(x^2 + x - 1)(x^2 - x + 1).$$

Expand and arrange symmetrically

$$(b+c-a)^2(b-c)+(c+a-b)^2(c-a)+(a+b-c)^2(a-b).$$

7. Divide $(x-1)(x-2)(x-3)-6$ by $x-4$.

Resolve into factors

(1) x^2+x-30.
(2) $(2x+y)^3+(x+2y)^3$.

8. Add together the fractions

$$\frac{x}{x+1}, \quad \frac{x+1}{x}, \quad \frac{x-1}{x}, \quad \frac{x}{x-1}.$$

Reduce $\dfrac{(x+y)^5-x^5-y^5}{(x+y)^3-x^3-y^3}$ to its lowest terms.

9. Solve the equations

(1) $\dfrac{1}{x+1}+\dfrac{2}{x+2}=\dfrac{3}{x+4}$.

(2) $\begin{cases} 3x+2y=77 \\ 6x-\ y=29. \end{cases}$

10. The sum of the two digits composing a number is 13. If 9 be added to the number the digits are inverted. Find the number.

III. HIGHER MATHEMATICS.

Tuesday, 1st October 1889.—2 *to* 4 *o'clock.*

1. Any two sides of a triangle are together greater than the third side.

The sum of the four sides of a quadrilateral is greater than the sum of the diagonals.

2. The angle in a segment of a circle is greater than, equal to, or less than a right angle, according as the segment is less than, equal to, or greater than a semicircle.

Construct a right-angled triangle, of which the base and altitude are given.

3. The rectangle contained by the diagonals of a quadrilateral inscribed in a circle is equal to the sum of the two rectangles contained by its opposite sides.

ABC is an equilateral triangle inscribed in a circle, and P is a point on the circumference remote from A; show that $PA = PB + PC$.

4. If two parallel planes be cut by a third plane their common section with it are parallel.

5. TP, TQ are tangents from an external point T to a parabola whose focus is S; show that $SP.SQ = ST^2$.

6. The locus of the foot of the perpendicular from the focus upon the tangent to an ellipse is a circle.

What is the corresponding proposition for the parabola?

7. Investigate directly the condition that x^3+px^2+9x+r is exactly divisible by $x+1$.

Resolve $8x^3-(x-y)^3$ into factors. Show that the expression $(ax-by)^3+(ay-bx)^3+3abxy\,(a-b)(x+y)$ is exactly divisible by either a^2+ab+b^2 or x^2-xy+y^2.

8. Establish the relation between the coefficients and roots of a quadratic equation.

Form an equation with integral coefficients whose roots are $2+\sqrt{3}$ and $2-\sqrt{3}$.

9. Solve the equations

$$(1)\quad \frac{2}{x-a}+\frac{1}{x+2b}=\frac{1}{a}-\frac{1}{b}.$$

$$(2)\quad \begin{cases} x(y+z)=14 \\ y(z+x)=81 \\ z(x+y)=20. \end{cases}$$

10. Sum the following series

(1) $a+(a+b)+(a+2b)+\ \ldots\ +(a+nb)$.

(2) $1+9+25+\ \ldots\ \ldots\ (2n-1)^2$.

11. If $\tan\alpha=\frac{1}{3}$, find the values of $\sin\alpha$ and $\sec\alpha$.

Solve the equation

$$\tan\alpha+\sec\alpha=1.$$

12. Prove that

$$\sin(A+B) = \sin A \cos B + \cos A \sin B,$$

and show also that

$$\cot A = \tfrac{1}{2}\left(\cot\frac{A}{2} - \tan\frac{A}{2}\right).$$

Tuesday, 4th March 1890.—2 *to* 4 *o'clock.*

1. Draw a straight line at right angles to a given straight line from a given point in the same.

What is the locus of a point equidistant from two given points?

2. Draw a straight line to touch two given circles.

3. Inscribe a circle in a given triangle.

Find the radius of the circle inscribed in the triangle, of which the sides are 4, 13, and 15.

4. The areas of similar triangles are to one another in the duplicate ratio of their homologous sides.

5. P is a point on a parabola whose vertex is A and whose focus is S. If PN be the ordinate of P, show that

$$PN^2 = 4AS.AN.$$

6. If the tangent and ordinate at any point P of an ellipse, whose centre is C, meet the major axis in T and N, show that

$$CT.\ CN = \overline{CA}^2.$$

7. State what is meant by the terms *rational* and *integral*, as applied to algebraic expressions.

Expand and arrange according to powers of x

(1) $(1 - x + x^2)^2(1 + x - x^2)^3$

(2) $(x^{\frac{1}{3}} - y^{\frac{1}{3}})(x^{\frac{1}{3}} + y^{\frac{1}{3}})^2$.

8. Simplify the fraction

$$\frac{x^4+x^2+1}{(x+1)^4+x^2(x+1)^2+x^4}.$$

If $$\frac{x}{(x^2+1)(x-1)} = \frac{A}{x-1} + \frac{Bx+C}{x^2+1}$$

where A, B, and C are numbers, find A, B, and C.

9. What is the condition that the equation $x^2+px+q=0$ should have two real roots?

Solve the equations

(1) $b\sqrt{a^2+x} + a\sqrt{b^2+x} = a^2 - b^2$.

(2) $\dfrac{x^2}{y} + \dfrac{y^2}{x} = 65$

$x+y=20$.

10. Find the sum of the series

$$a+ar+\ \ .\ \ .\ \ .\ \ ar^{n-1}.$$

Find the smallest number of terms of the series $1+\frac{1}{2}+\frac{1}{4}+\ \ .\ \ .\ \ .$ which must be taken that their sum may differ from 2 by less than ·000001.

11. If $\cos A=\frac{1}{3}$, find the value of $\sin A$ and $\sin\frac{A}{2}$.

Find θ from the equation

$$\tan\left(\theta+\frac{\pi}{4}\right)+\tan\left(\theta-\frac{\pi}{4}\right)=2\tan\frac{\pi}{3}.$$

12. In any triangle prove that

$$a^2=b^2+c^2-2bc\cos A.$$

Show also that

$$\frac{\cos A}{a}+\frac{\cos B}{b}+\frac{\cos C}{c}=\frac{a^2+b^2+c^2}{2abc}.$$

IV. ENGLISH.

Wednesday, 2nd October 1889.—9 *to* 11 *o'clock.*

1. Take down the following passage, attending to the spelling and the pointing :—

(*Passage to be dictated here.*)

2. Write a short Essay on either of the following subjects, attending to the expression and the pointing :—

(1) Sources of the English Vocabulary.
(2) Emigration.

3. Define the Noun, and exemplify Abstract Nouns. Mention the various parts of Speech that may be substituted for the noun, and give examples.

4. Derive any *eight* of the following :—Accept, advance, author, benediction, bliss, charter, college, doctor, duke, finish, happiness, mind, penalty, permanent, prose, verse.

5. State the difference in meaning between—

(1) Advice and Counsel.
(2) Rivalry and Emulation.
(3) Distinguish and Discriminate.
(4) Rational and Reasonable.

6. Analyze these sentences :—

(1) Uneasy lies the head that wears a crown.
(2) Where there is yet shame, there may in time be virtue.

(3) Hope is always liberal ; and they that trust her promises make little scruple of revelling to-day in the profits of the morrow.

7. Correct, if need be :—

(1) He does not appear to have lavished his early wit either on fictitious subjects or public occasions.

(2) He left this on Wednesday last.

(3) He can only come to us on Thursday first.

(4) If one be patient, he will be sure to gain his end.

8. *Either* (1) explain these historical terms—The Wars of the Roses, The Covenanters, The First Pitt Administration ; *or* (2) mention the dates of the battles of Hastings, Bannockburn, and Flodden, giving a short account of any one of these battles. Also, *either* (1) name the chief Scottish Poets of the sixteenth century, giving the title of one of the works of each ; *or* (2) name some of the Elizabethan dramatists, some of the Queen Anne wits, and some British novelists before Scott.

9. In what counties are London, Birmingham, Manchester, Liverpool, Dublin, Belfast, Edinburgh, and Glasgow?

Enumerate the chief rivers on the East Coast of Scotland north of the Forth, *or* the chief on the East Coast of England north of the Thames.

Wednesday, 5th March 1890.—9 *to* 11 *o'clock.*

1. Take down the following passage, attending carefully to spelling and punctuation :—

(*Passage to be dictated here.*)

2. Write a short Essay, neatly expressed and well punctuated, on either of the following subjects :—

(1) Study.

(2) Amusement.

3. Turn the following into a more simple style :—"Since the English ear has been accustomed to the mellifluence of Pope's numbers, and the diction of poetry has become more splendid, new attempts have been made to translate Virgil ; and all his works have been attempted by men better qualified to contend with Dryden. I will not engage myself in an invidious comparison by opposing one passage to another. . . . It is easy to note a weak line, and write one more vigorous in its place ; to find a happiness of expression in the original, and transplant it by force into the version : but what is given to the parts may be subducted from the whole, and the reader may be weary, though the critic may commend."

4. Give the derivation of any *six* of the following terms :—Advantage, calculate, enthusiasm, geography, preliminary, thing, term, tribulation, very, wiseacre.

5. Either (1) define and exemplify the following terms of English

grammar: —*Etymology, inflection, patronymic, subordinating conjunction, hybrid, anapæstic verse;* or

(2) State the precise differences in the meanings of the following words:—

(1) Attempt, essay, endeavour.
(2) Anger, rage, wrath.
(3) Bravery, valour, daring.
(4) Companion, comrade, friend.

6. Correct:—

(1) I had expected to have seen him yesterday, but he was away from home.
(2) He exercised himself in speculation upon the probable effects of causes presently in operation.

Analyze the sentence:—"Where, therefore, science seemed to turn all things—even life and intelligence itself—into dead matter, which moves only as it is moved by another, philosophy, guided by this new idea, is enabled to find life even in that which is inorganic and dead."

7. Draw a rough outline map, *either* (1) of Ireland, *or* (2) of Africa, and fill in as best you can.

8. State what you know of Chaucer, Scott, Moore, and Tennyson.

Either (1) mention the dates of the battles of Blenheim, Culloden, Copenhagen, Waterloo, and the victorious generals engaged in these battles; *or* (2) give some account of the American War of Independence, or of the Founding of the Indian Empire.

V. NATURAL PHILOSOPHY.

Wednesday, 2nd October 1889.—11.30 *to* 1.30 *o'clock.*

1. Distinguish between kinetic and potential energy, and show how both are exhibited in the motion of a pendulum.

A pendulum, one yard long, swings through an arc of 30° on each side of the vertical. Find the speed of the bob at the lowest point of its swing.

2. Distinguish among the conduction, the convection, and the radiation of heat.

3. What effect has pressure on the melting points of solids? Give examples of solids differently affected.

4. Explain what is meant by the primary note of an organ-pipe. What is the wave-length of the primary note in an organ-pipe (1) when it is open at both ends, (2) when it is open at one end only?

5. Draw a diagram to show how a double convex lens may be used to obtain a magnified virtual image of a near object.

6. What deduction do you draw from the position in the spectrum of radiant-heat rays, light rays, and chemical rays respectively? How is the refraction of radiant heat proved?

7. Describe an experiment to show "electrostatic induction"; and define the "specific inductive capacity" of a dialetric.

8. Describe a Daniell's galvanic cell, explaining in what the value of the invention consists.

Wednesday, 5th March 1890.—11.30 *to* 1.30 *o'clock.*

1. Explain the distinction in wave-motion between longitudinal and transverse vibrations. Find the relation between the wave-length (l), the velocity of propagation (v), and the time of one complete vibration (t).

2. On what physical causes do the pitch, intensity, and quality of a musical note respectively depend?

3. Draw a diagram showing the relative positions of image and object, when (1) a real, (2) a virtual image of the object is formed in a concave mirror.

4. Describe the appearance of the solar spectrum, and explain how the dark lines in it are accounted for.

5. Describe an experiment to show that bodies when cold absorb the same kind of rays that they give out when heated.

6. A piece of ice is melted by the application of heat, and the water is then boiled away. Describe the changes in the temperature and volume of the substance during the whole experiment.

7. Describe and explain the construction and use of the *electrophorus*.

8. What form of electric battery should be used (1) to work a long telegraph wire, (2) to fuse a piece of platinum? What is the principle involved?

VI. MECHANICS.

Wednesday, 2nd October 1889.—2 *to* 4 *o'clock.*

1. Explain what is meant by the "composition of velocities," and give an example.

A point has component velocities northwards and westwards of 30 and 40 units respectively. Find the magnitude and direction of the resultant velocity.

2. What is the acceleration of a particle whose velocity changes from 10 to 20 feet per second while it travels 100 feet.

3. What is meant by a unit of work, and by a horse-power?

How many foot-pounds are required to raise 10 tons 100 yards, and how many horse-power to do it in five minutes?

4. Define "Mass" and "Inertia."

State Newton's first law of motion, and give an illustration of it.

5. Two parallel forces of 3 and 4 units acts on a body in opposite directions in lines 1 foot apart; specify the force required to balance them, and show by a diagram how the three forces act.

6. Explain how the Capstan possesses mechanical advantage.

If the radius of the drum be 1 foot, and the spokes 6 feet in length, find the weight which six men, each exerting a force of 1 cwt., will just be able to support.

How would the result be affected if friction were taken into account?

7. Define the density of a substance.

A cubic foot of water weighs 1000 ozs.; find its density, and specify the system of uuits employed.

8. Define a perfect Fluid.

Show that in a fluid not acted on by external forces the pressure is the same throughout.

Wednesday, 5th March 1890.—2 *to* 4 *o'clock.*

1. Prove the parallelogram of velocities.

A point is moving northwards, eastwards, and vertically upwards, with velocities of 3, 4, and 5 units respectively. Find its resultant velocity.

2. At what rate must a stone be projected upwards that it may just rise 100 feet? How long will it take to reach this height?

3. State Newton's Second Law of Motion, and explain how it enables us to measure force. How many units of force, measured on this system, are there in 12 pounds weight?

4. Describe an experiment to show the equilibrium of three forces applied at a point, and explain how it proves the parallelogram of force.

5. Define the centre of inertia of a system. Masses of 1 and 3 lbs. are placed at the extremities of a light rod, and a mass of 2 lbs. is placed midway between them. Find the point about which the rod will balance in any position.

6. Find the ratio of the power to the weight in the system of pulleys in which there is one continuous string. Show that in the frictionless working of this arrangement the work done against the weight is equal to the work done by the power. What is the principle of which this is an example?

7. Define specific gravity.

A mass of 10 lbs. is found to weigh 1 lb. in a liquid whose specific gravity is $\frac{1}{2}$. Find the specific gravity of the body.

8. Explain the construction and use of the syphon.

VII. LATIN.

Thursday, 3rd October 1889.—9 *to* 11 *o'clock.*

I. Translate:—

(1) Olympiae per stadium ingressus esse Milo dicitur, quum humeris sustineret bovem vivum. Utrum igitur has corporis an Pythagorae tibi malis vires ingenii dari? Denique isto bono utare, dum adsit; quum absit, ne requiras, nisi forte adolescentes pueritiam, paullum

aetate progressi adolescentiam debent requirere. Cursus est certus aetatis et una via naturae eaque simplex suaque cuique parti aetatis tempestivitas est data, ut et infirmitas puerorum et ferocitas iuvenum et gravitas iam constantis aetatis et senectutis maturitas naturale quiddam habeat quod suo tempore percipi debeat.

(2) Malleoli, plantae, sarmenta, viviradices, propagines nonne ea efficiunt, ut quemvis cum admiratione delectent? Vitis quidem, quae natura caduca est et, nisi fulta est, ad terram fertur, eadem, ut se erigat, claviculis suis quasi manibus quidquid est nacta complectitur, quam serpentem multiplici lapsu et erratico ferro amputans coercet ars agricolarum, ne silvescat sarmentis et in omnes partes nimia fundatur.

II. In the above passages parse fully :—*utare, fulta est, complectitur, multiplici, silvescat.*

III. Give the meaning, gender, and genitive singular of the following nouns :— *caro, cor, dies, pelagus, sal.*

IV. When does *ut* require the subjunctive? When does *qui?* When *quum?* When *dum?*

V. Translate :—

Quibus ex castris cum locus angustus atque impeditus esset transeundus Pharnaces in insidiis delectos pedites omnesque paene disposuit equites, magnam autem multitudinem pecoris intra eas fauces dissipari iussit: ut, sive amicus Domitius eas angustias transiret, nihil de insidiis suspicaretur, cum in agris et pecora et homines animadverteret versari tamquam amicorum adventu; sive ut in hostium fines veniret, praeda diripienda milites dissiparentur dispersique caederentur. Haec cum administraret, nunquam tamen intermittebat legatos de pace atque amicitia mittere ad Domitium, cum hoc ipso crederet facilius eum decipi posse.

VI. Translate into Latin :—

The consul replied that in that war the Rhodians had not deserved to be ranked (*habere*) as friends and allies. When they heard this, the ambassadors flung themselves (*prosternere*) on the ground, begging the consuls and all who were present, not to think it fair that new and unfounded (*falsus*) charges should prejudice the case of the Rhodians (*obesse Rhodiis*) more than their former good services. Straightway they assumed a mourning (*sordidus*) dress, and began to go round the houses of the chief men, beseeching them to inquire into (*cognoscere*) their cause before they condemned them.

Thursday, 6th March 1890.—9 *to* 11 *o'clock.*

I. Translate :—

(1) Quo repente discursu, haud secus quam silvis montibusque accensis, omnia circum virgulta ardere, capitumque irrita quassatio excitans flammam hominum passim discurrentium speciem praebebat. Qui ad transitum saltus insidendum locati erant, ubi in summis montibus ac super se quosdam ignes conspexere, circumventos se esse rati

praesidio excessere ; qua minime densae micabant flammae, velut tutissimum iter petentes summa montium iuga, tamen in quosdam boves palatos a suis gregibus inciderunt. Et primo cum procul cernerent, veluti flammas spirantium miraculo attoniti constiterunt.

(2) Ad ea consul : 'tu quidem, Cn. Corneli, macte virtute esto, sed cave frustra miserando exiguum tempus e manibus hostium evadendi absumas. Abi, nuntia publice patribus, urbem Romanam muniant ac priusquam hostis victor advenit praesidiis firment ; privatim Q. Fabio, Aemilium praeceptorum eius memorem et vixisse adhuc et mori. Me in hac strage militum meorum patere expirare, ne aut reus iterum e consulatu sim aut accusator collegae existam, ut alieno crimine innocentiam meam protegam.'

II. In the second of the above passages, *either* parse all the verbs in the last sentence, *or* rewrite that sentence as it would appear in *Oratio Obliqua*.

III. Give the principal parts of the following verbs :—*micabant— evadere — spreverit — fidens — assuescerent — extorqueamus — ratus — desiisse*.

IV. Translate :—

Dux prima luce omnes eos, qui in monte consederant, ex superioribus locis in planiciem descendere atque arma proicere iussit. Quod ubi sine recusatione fecerunt passisque palmis proiecti ad terram flentes ab eo salutem petiverunt, consolatus consurgere iussit et pauca apud eos de lenitate sua locutus, quo minore essent timore, omnes conservavit militibusque suis commendavit, ne qui eorum violaretur. Hac adhibita diligentia ex castris sibi legiones alias occurrere et eas, quas secum duxerat, in vicem requiescere atque in castra reverti iussit eodemque die Larisam pervenit.

V. Translate into Latin :—

The consul, on being summoned (*excio*) by letter, handed over his province and his army to Cincius, the praetor, and sent Messalla, the admiral (*praefectus*) of the fleet, with a division (*pars*) of his vessels to Africa, in order to seek for booty (*praedor*), and at the same time to see what the Carthaginians were doing, and what preparations they were making. He himself set out for Rome with ten ships, and, immediately after he had arrived, convened (*habeo*) the senate. Here he gave a full account of (*commemorare de*) his own exploits.

VIII. LOGIC.

Thursday, 3rd October 1889.—11.30 *to* 1.30 *o'clock.*

[*The Candidate may take either Paper* A *or Paper* B, *but must confine himself to the Paper he has chosen.*]

A.

1. State the distinction between Denotation and Connotation as applied to terms, and give examples.

2. What terms alone admit of being defined? Distinguish between nominal and real definition, and give an example of each.

3. What is the relation between Definition and Division? Give the rules of logical division, with examples. Explain the fallacy of cross division.

4. Define "Syllogism," "Mood," and "Figure." Complete the following, and express its mood and figure :—"Nothing that is cruel can be expedient, for cruelty is revolting to the nature of man."

5. When is an *argumentum ad hominem* valid, and when fallacious; and, in the latter case, to what fallacy does it belong? Exemplify.

6. "A perfect induction is demonstrative and syllogistic; imperfect induction is neither." Explain the difference between perfect and imperfect induction, and examine the truth of this assertion.

B.

1. "Distance outwards is in its own nature invisible, and yet it is perceived by sight." Explain in what sense of the terms this seeming contradiction is true.

2. "The sight of things is really foresight." What does this mean, and is there truth in what it means?

3. "We see God as plainly as we see a man who is present and speaking to us." Explain this, and the grounds on which it has been defended.

4. State the more important truths about mind and the universe which are brought out as suggested by Berkeley's theory of vision.

5. What is the end of debate (1) according to Alciphron, (2) according to Crito; and how does each of these views affect a man's conception of Theistic reasoning?

6. What is meant by Agnosticism in religion? State the leading arguments against the agnostic position.

Thursday, 6th March 1890.—11.30 *to* 1.30 *o'clock.*

[*The Candidate may take either paper* A *or paper* B, *but must confine himself to the paper he has chosen.*]

A.

1. What is meant by the *quantity* and the *quality* of a proposition? and what by the *distribution* of Terms?

Point out subject, predicate, and copula in each of the following propositions; and express the propositions in simple logical form, marking Quantity and Quality :—

(1) Handsome is that handsome does.

(2) Be just.

(3) None but the brave deserves the fair.

2. Distinguish between *definition* and *description*. Point out what is wrong in each of the following so-called definitions, and assign the reasons :—

(1) Man was made to mourn.
(2) A gentleman is a man having no visible means of subsistence.
(3) By high-sounding words I mean grandiloquence and bombast.
(4) A double-minded man is unstable in all his ways.

3. What is meant by *reduction* of the Syllogisms? Give a single example of each of its forms.

Supply premisses to the conclusion, "Some logicians are bad reasoners," and specify mood and figure.

4. Explain and exemplify *ignoratio elenchi* and *petitio principii*.

What is logically wrong in inferring that a man must be a dangerous character from the circumstance that he does not "sleep o' nights"?

5. State and exemplify the Inductive Method of Agreement.

6. What is meant by Analogical reasoning, and on what does its value depend? Is the following a just Analogy:—"All flesh is grass, and so must fall before the scythe of Time"?

B.

1. Define the following Berkeleyan terms:—Arbitrary, Reality, Matter, Idea, Notion, Visual Language.

2. What is the Cartesian principle of Certainty? How did Descartes explain our knowledge of God, and of the External World? To what criticisms was Cartesianism subjected by Locke?

3. What is the kind of Theistic Proof that Alciphron demands; and how does Berkeley show that the demand is unreasonable?

4. How may we be said to hold God's existence with even a higher degree of assurance than we do that of a fellow-man?

5. The Moral difficulty about the existence of God—what, and how answered?

IX. MORAL PHILOSOPHY.

Thursday, 3rd October 1889.—2 *to* 4 *o'clock.*

1. What is meant by "Psychology of Ethics"? State the leading difficulties in the way of an Evolutionist treatment here. Are they insurmountable?

2. Discuss the question of the Foundation of Morality.

3. What is Hobbes's place in English Philosophy? Give some account, with criticism, of his ethical teaching.

4. State clearly Locke's ethical position, and comment upon it.

5. State Butler's view of Conscience, and indicate the circumstances (historical) under which it was developed.

6. What is meant by Utilitarianism? Exemplify its leading positions from Bentham.

Thursday, 6th March 1890.—2 *to* 4 *o'clock.*

1. Enumerate and explain the various Tests of Ethical First Principles. Discuss the philosophical bearings of alleged *exceptions* to moral law.

2. State fully, with reference or quotation, Butler's account of Conscience. Point out wherein it is defective, and mention later modifications on Butler's doctrine.

3. What exactly is meant by Utilitarianism? How does the Utilitarian view Obligation; and what are the difficulties that he has here to meet? Is there any necessary incompatability between Utilitarianism and Intuitionism?

4. Distinguish between "want" and "wish." Give a classification of man's natural wants, and indicate the principles on which they are graduated in ethical value.

5. Indicate the functions of Will, and explain exactly what is meant by freedom of Will.

6. What is meant by saying that pleasure is the "intrinsic reward" of virtue? Is the position that maintains the existence of this intrinsic reward necessarily a selfish one? Support your answer by historical reference to ethical systems. In what sense is it true that virtue has "intrinsic" value?

7. Write a brief Essay on Paley and his philosophy; accompanying your exposition with relevant criticism.

X. GREEK.

Friday, 4th October 1889.—9 *to* 11 *o'clock.*

I. Translate into English:—

(1) ταῦτα δὲ διαπραξάμενοι οἱ βάρβαροι ἦκον ἐπ' ἀντίπορον λόφον τῷ μαστῷ· καὶ ὁ Ξενοφῶν διελέγετο αὐτοῖς δι' ἑρμηνέως περὶ σπονδῶν καὶ τοὺς νεκροὺς ἀπῄτει. οἱ δὲ ἔφασαν ἀποδώσειν ἐφ' ᾧ μὴ καίειν τὰς οἰκίας. συνωμολόγει ταῦτα ὁ Ξενοφῶν. ἐν ᾧ δὲ τὸ μὲν ἄλλο στράτευμα παρῆει, οἱ δὲ ταῦτα διελέγοντο, πάντες οἱ ἐκ τούτου τοῦ τόπου συνερρύησαν. ἐνταῦθα ἵσταντο οἱ πολέμιοι. καὶ ἐπεὶ ἤρξαντο καταβαίνειν ἀπὸ τοῦ μαστοῦ πρὸς τοὺς ἄλλους, ἔνθα τὰ ὅπλα ἔκειτο, ἵεντο δὴ οἱ πολέμιοι πολλῷ πλήθει καὶ θορύβῳ· καὶ ἐπεὶ ἐγένοντο ἐπὶ τῆς κορυφῆς τοῦ μαστοῦ, ἀφ' οὗ Ξενοφῶν κατέβαινεν, ἐκυλίνδουν πέτρας· καὶ ἑνὸς μὲν κατέαξαν τὸ σκέλος, Ξενοφῶντα δὲ ὁ ὑπασπιστὴς ἔχων τὴν ἀσπίδα ἀπέλιπεν.

(2) αἱ δ' οἰκίαι ἦσαν κατάγειοι, τὸ μὲν στόμα ὥσπερ φρέατος, κάτω δ' εὐρεῖαι· αἱ δὲ εἴσοδοι τοῖς μὲν ὑποζυγίοις ὀρυκταί, οἱ δὲ ἄνθρωποι κατέβαινον ἐπὶ κλίμακος. ἐν δὲ ταῖς οἰκίαις ἦσαν αἶγες, οἷες, βόες, ὄρνιθες καὶ τὰ ἔκγονα τούτων· τὰ δὲ κτήνη πάντα χιλῷ ἔνδον ἐτρέφοντο. ἦσαν δὲ καὶ πυροὶ καὶ κριθαὶ καὶ ὄσπρια καὶ οἶνος κρίθινος ἐν κρατῆρσιν. ἐνῆσαν δὲ καὶ αὐταὶ αἱ κριθαὶ ἰσοχειλεῖς καὶ κάλαμοι ἐνέκειντο οἱ μὲν μείζους οἱ δὲ ἐλάττους, γόνατα οὐκ ἔχοντες· τούτους δ' ἔδει, ὁπότε τις διψῴη, λαβόντα

εἰς τὸ στόμα μύζειν. καὶ πάνυ ἄκρατος ἦν, εἰ μή τις ὕδωρ ἐπιχέοι· καὶ πάνυ ἡδὺ συμμαθόντι τὸ πῶμα ἦν.

II. Parse the following verbs, giving the principal parts of each :—*παρῆει, ἔκειντο, κατέαξαν, διψώη, συμμαθόντι.*

III. Give the genitive and dative, in all numbers, of the following : —*θυγάτηρ, οὗτος, κέρας, θρίξ, ἵλεως.*

IV. Give the comparative and superlative of the following :—*πένης, ἴσος, μάκρος, πόρρω, ἡδέως.*

V. Write out (1) the indicative of *οἶδα*, (2) the present subjunctive active of *δηλόω*, (3) the second aorist imperative active of *δίδωμι.*

VI. Translate into Greek :—(1) The guides asked (*ἐρωτάω*) which of the two roads our soldiers wished to choose (*ἑλέσθαι*). (2) If we march for three days we shall come to the sea. (3) Do not go away until you hear the trumpet (*σάλπιγξ*). (4). The king said that he would himself slay (*ἀπόκτείνω*) anyone who did not obey him. (5) I remember (*μέμνημαι*) the battle well, though it took place long ago (*πάλαι*).

Friday, 7th March 1890.—9 *to* 11 *o'clock.*

I. Translate:

(1) *Ἐνταῦθα δὴ οὕτω βαρέως ἤνεγκε τὸ πάθος ὥστε ἀνήλωτο μὲν ὃ εἰλήφει ὄψον, ὃ δὲ ἔτι αὐτῷ λοιπὸν ἦν τοῦ ἐμβάπτεσθαι, τοῦτό πως ὑπὸ τοῦ ἐκπεπλῆχθαί τε καὶ τῇ τύχῃ ὀργίζεσθαι δυσθετούμενος ἀνέτρεψεν. ὁ μὲν δὴ λοχαγὸς ὁ ἐγγύτατα ἡμῶν ἰδὼν συνεκρότησε τὼ χεῖρε καὶ τῷ γέλωτι ηὐφραίνετο. ἐγὼ μέντοι, ἔφη, προσεποιούμην βήττειν· οὐδὲ γὰρ αὐτὸς ἐδυνάμην τὸν γέλωτα κατασχεῖν. τοιοῦτον μὲν δή σοι ἕνα, ὦ Κῦρε, τῶν ἑταίρων ἐπιδεικνύω, ἔφη. ἐπὶ μὲν δὴ τούτῳ ὥσπερ εἰκὸς ἐγέλασαν.*

(2) *Ἀκούσας δ' ταῦτα ὁ Κῦρος παρήγγειλε τῷ πρώτῳ τεταγμένῳ ταξιάρχῳ εἰς μέτωπον στῆναι, ἐφ' ἑνὸς ἄγοντα τὴν τάξιν, ἐν δεξιᾷ ἔχοντα ἑαυτόν, καὶ τῷ δευτέρῳ ἐκέλευσε ταὐτὸ τοῦτο παραγγεῖλαι, καὶ διὰ πάντων οὕτω παραδιδόναι ἐκέλευσεν. οἱ δὲ πειθόμενοι ταχὺ μὲν παρήγγελλον, ταχὺ δὲ τὰ παραγγελλόμενα ἐποίουν ἐν ὀλίγῳ δὲ χρόνῳ ἐγένοντο τὸ μὲν μέτωπον ἐπὶ τριακοσίων, τοσοῦτοι γὰρ ἦσαν οἱ ταξίαρχοι, τὸ δὲ βάθος ἐφ' ἑκατόν. ἐπεὶ δὲ κατέστησαν, ἔπεσθαι ἐκέλευσεν ὡς ἂν αὐτὸς ἡγῆται· καὶ εὐθὺς προχάζων ἡγεῖτο.*

II. In the above passages parse fully :—*ἀνήλωτο—ἐκπεπλῆχθαι—ηὐφραίνετο—στῆναι—ἔπεσθαι.*

III. Give the accusative plural of *τριήρης—βασιλεύς—ὄρνις—ἦπαρ —θυγάτηρ*, and the vocative singular of *Περσης—Περικλῆς—Κρονίδης.*

IV. Decline in singular and plural *θρίξ* and *οὖς.*

V. Write down the present indicative passive of *δηλόω*, and the aorist indicative middle of *ἵημι.*

VI. Translate into Greek :—(1) If you had given quickly, you would have given twice. (2) He said he had never seen anything so wonderful. (3) Do not enter the city, unless you wish to be killed. (4) We shall remain in the camp until we learn what has happened. (5) Let all the cavalry go forward, in order that there may be no danger.

XI. FRENCH.

Friday, 4th October 1889.—11.30 *to* 1.30 *o'clock.*

N.B.—*Candidates are reminded of the regulation that mere translation into English is not sufficient, but there must be translation of an English passage into each of the languages taken up.*

I. Translate into English :—

J'avais pris un bain si violent que l'on était sur le point de me rejeter comme mort dans la mer, quand un officier qui visitait mon portefeuille y trouva la lettre de mon père que vous venez de lire et la signature de lord Collingwood. Il me fit donner des soins plus attentifs ; on me trouva quelques signes de vie, et quand je repris connaissance, ce fut, non à bord de la gracieuse *Naïade*, mais sur *la Victoire*. Je demandai qui commandait cet autre navire. On me répondit laconiquement : Lord Collingwood. Je crus qu'il était fils de celui qui avait connu mon père ; mais quand on me conduisait à lui, je fus détrompé. C'était le même homme.

Je ne pus contenir ma surprise quand il me dit, avec une bonté toute paternelle, qu'il ne s'attendait pas à être le gardien du fils après l'avoir été du père, mais qu'il espérait qu'il ne s'en trouverait pas plus mal ; qu'il avait assisté aux derniers moments de ce vieillard, et qu'en apprenant mon mon il avait voulu m'avoir à son bord ; il me parlait le meilleur français avec une douceur mélancolique dont l'expression ne m'est jamais sortie de la mémoire. Il m'offrit de rester à son bord, sur parole de ne faire aucune tentative d'évasion. J'en donnai ma parole d'honneur, sans hésiter, à la manière des jeunes gens de dix-huit ans, et me trouvant beaucoup mieux à bord de *la Victoire* que sur quelque ponton, étonné de ne rien voir qui justifiât les préventions qu'on nous donnait contre les Anglais, je fis connaissance assez facilement avec les officiers du bâtiment, que mon ignorance de la mer et de leur langue amusait beaucoup, et qui se divertirent à me faire connaître l'une et l'autre avec une politesse d'autant plus grande que leur amiral me traitait comme son fils.

II. Translate into French :—

Henry's great task was to put an end to the ravages of the Hungarians. There were then no towns in the interior of Germany; and the people preferred the life of the fields. These barbarians therefore met with no serious resistance in their terrible invasions ; and every year they laid several districts waste with fire and sword (say *they put* (mettre) *several districts to fire and sword*), and carried away with them thousands of inhabitants as slaves. However, one day Henry gained an advantage over one of their princes, and made him prisoner. In consequence of this he obtained from them a truce (*trêve*, fem.) of nine years, by which he profited so as to be able to defend himself

better in future. When the truce had expired, the Hungarians sent for (say *sent to ask*) the tribute which the Germans had consented to pay. In order the better to express his contempt, Henry sent them only a dead dog whose ears and tail had been cut off. Exasperated with anger, the barbarians prepared themselves to take their revenge. Henry, however, expected them in Saxony, and in the bloody battle of Merseburg he cut them to pieces, and for a long time made them disinclined (say *took from them the wish*) to begin again.

III. 1. Give the plural and meaning of *mon neveu*, *ton époux*, *ce fut lui ;* and the singular and meaning of *ces animaux*, *ceux-ci*, *ils portèrent.*

2. Give the feminine and meaning of *un beau fils*, *mon cher monsieur ce gros paysan*, *notre heureux voisin.*

3. Give the French words for 9, 13, 18, 21, 35, 57, 74, 80, 99, 1889.

4. Give the 3d sing. and 3d plural of the present indic., past definite and future of *acheter*, *appeler*, *aller*, *vouloir*, *savoir*, *s'asseoir ;* and the 2d sing. and 2d plur. imperative of *venir*, *faire*, *aller*, *se coucher.*

5. Give the 3d sing. and 3d plur., masc. and fem., past indefinite (the first compound tense) of *se coucher* (*a*) negatively, (*b*) interrogatively.

6. Assign the following works to their respective authors, and state to what class of writings each belongs, viz. :—l'Avare, Télémaque, Paul et Virginie, Les Misérables, Phèdre, la Nouvelle Héloïse, la Henriade, Fables, De l'Allemagne, Méditations.

Friday, 7th March 1890.—11.30 *to* 1.30 *o'clock.*

I. Translate into English :—

(*a*) Une résistance sérieuse paraissait donc tout à fait impossible : Hoche seul ose espérer le succès : il n'a que vingt-quatre ans, n'occupe encore dans l'armée par son grade, qu'un rang subordonné, et déjà il parle, il agit en maître, en homme sûr de lui-même et qui commande à la fois la confiance avec l'obéissance. Il correspond avec le Comité de salut public et avec l'adjoint du ministre. Il écrit au premier : "La place sera brûlée avant d'être rendue." Il écrit au second : "Si la garde citoyenne entreprend de nous forcer, elle doit s'attendre à voir tourner contre elle les armes destinées à combattre les tyrans et les traîtres." Cette résolution, dit un de ses derniers biographes, il la fait passer dans le cœur des soldats et les ranime, il rétablit la discipline dans leurs rangs et les mène au travail avant de les mener à l'ennemi.

(*b*) Travot traita son prisonnier avec les égards dus au courage et au malheur. Ils entrèrent dans la ville d'Angers, côte à côte, s'entretenant familièrement à travers le flot des populations accourues à leur rencontre : un mouchoir taché de sang entourait le front de Charette : jamais sa contenance n'avait été plus fière ni son regard plus assuré.

Transféré à Nantes, il y fut jugé et condamné à mort. L'autorité militaire, au mépris des ordres formels de Hoche, souffrit que Charette fût impunément outragé dans cette même ville où, l'année précédente, il avait fait une entrée presque triomphante. L'officier de l'escorte chargée de le conduire au supplice le fit passer à dessein sous les fenêtres de la maison où s'était réfugiée sa famille. Sa sœur parut à la fenêtre : Charette s'arrêta, leva les yeux et l'encouragea du regard et du geste. Parvenu au lieu fatal, intrépide et calme devant la mort, il resta debout, commanda le feu ; puis s'affaissa doucement sur lui-même.

II. Translate into French :—

The American revolution was scarcely finished when the French revolution broke out. It was at first approved of by the majority of the English people. It pleased them to see a neighbouring nation adopt the constitutional monarchy ; it seemed to them that the French were imitating their own example. But the insults offered by the populace to the nobles, the priests, and the king, and the violent acts of the French assemblies soon changed completely the sentiments of the English people. The execution of Lewis XVI., ordered by the Convention with an air of defiance to Europe, exasperated their loyal hearts. The whole of England desired war against France. William Pitt was at that time governing the British Empire. He wished for peace ; he had need of it in order to accomplish reforms which he wanted to carry out, and to prevent the partition of Poland projected by Russia and Prussia. He resisted for some time the pressure (say *impulsion*) of the king and the nation, but in the end he was obliged to decide in favour of war.—P. Lacombe.

III. 1. Give plural and meaning of *quel fou*, *ton genou*, *monsieur le général*, *il mangea*, *elle va ;* and the singular and meaning of *ses yeux*, *nos vieux amis*, *qu'ils fussent*.

2. Give feminine and meaning of *mon jardinier*, *cet époux*, *un prince grec*, *c'est lui*.

3. Give the adverb and meaning of *heureux*, *lent*, *doux*, *fou*, *prudent*, *gentil*, *franc*, *meilleur*, *pire*, *précis*.

4. Give the 3d sing. and 3d plur. present indicative, past definite, and future of *avoir*, *être*, *faire*, *vendre*, *jeter*, *devoir*, *pouvoir*, *prendre*, *tenir*, *aller*.

5. Give the 1st sing. and 1st plural, masc. and fem., past indefinite (the first compound tense) of *se fâcher*, (*a*) negatively, (*b*) interrogatively.

6. Write brief notices of any three of—Molière, Béranger, Rousseau, Lamartine, Châteaubriand.

XI. GERMAN.

Friday, 4th October 1889.—2 *to* 4 *o'clock.*

N. B.—*Candidates are reminded of the regulation that mere translation into English is not sufficient, but there must be translation of an English passage into each of the languages taken up.*

I. Translate into English :—

Marsland (Arm in Arm mit Macdonald durch das Thor). Das war ja eine große, unerwartete Freude, Dich wiederzusehn—hier kann ich Dir gleich meine Edith zeigen—Miß Eva Webster—mein alter Freund Macdonald.

Edith. Oh—ich kenne Sie aus Papas Erzählungen. Von niemand hat er so viel gesprochen—als von Ihnen.

Macdonald. Ich denke, wir werden auch Freunde werden?

(Gibt ihr die Hand.)

Marsland. Das versteht sich—vor allem sorgt für sein Unterkommen—das beste Zimmer—und dann schickt uns einen Imbiß—wir plaudern hier etwas.

Edith. Gleich, Papa.—

Eva (indem sie mit Edith nach links geht.) Du warst ja ganz anders, Edith.

Edith. Das ist ja ein Alter—da kann man freundlich sein.

(Beide ab links.)

Macdonald. Hübsches Mädel, Deine Tochter!

Marsland. Ein gutes Kind.

Macdonald. Aber ganz flügge—die wirst Du nicht lange im Neste behalten.

Marsland. Edith ist siebzehn Jahre—vor drei Jahren wird nicht an heiraten gedacht.

Macdonald. So—so—so—so.

Marsland. Ja, ja—ja, ja—das steht fest; in meinem Hause regiere ich—was geht ihr denn ab—sie hat jetzt die drei schönsten Jahre vor sich—es wäre ja reiner Unsinn.

Macdonald. Dann rate ich Dir, „ziehe eine chinesische Mauer um Dein Haus, aber gib keine Jagd."

Marsland. Ich habe einmal die Meute—das geht nicht anders. Sorgen hat man, wenn man Kinder hat.

Macdonald. Ja, ich komme auch von meinem Neffen; denke einen flotten, frischen jungen Kerl zu sehen—was finde ich—einen Philister—eine Art Kretin.

Marsland. Oho!

Macdonald. Waren wir Philister, als wir jung waren—wie?

Marsland. Nein.

Macdonald. Und sind ganz vernünftige Männer geworden.

Marsland. Ich denke.

Macdonald. Wer in der Jugend ein Duckmäuser ist, aus dem wird nie ein ganzer Mann.

II. Translate into German :—

Henry resolved to put an end to the ravages (Verheerung, *fem.*) of the Hungarians. There were at that time very few towns in Germany, and the people preferred the free life of the fields. These foreign barbarians *met* (say *found*) therefore *with* little resistance in their terrible nvasions ; and every year they devastated several districts of Germany with fire and sword, and carried away with them thousands of inhabitants as slaves. However, one day Henry captured one of their leaders, and obtained a truce (Waffenstillstand, *m.*) of nine years. During that time he was not idle. When the truce was expired, the Hungarians demanded the tribute (Tribut, *m.*) which the Germans had agreed (say *promised*) to pay. In order to show his contempt, Henry sent them only a dead dog whose ears and tail had been cut off. This affront made them very angry, and they came to revenge themselves. But Henry expected them in Saxony, and defeated them in the bloody battle of Merseburg. After that they did not dare to attack him again.

III. 1. Give the nominative and genitive singular, and nominative plural (with the definite article), of the German for *any ten* of the following words :—*horse*, *cow*, *cat*, *glass*, *bottle*, *arm*, *eye*, *stick*, *forest*, *way*, *wind*, *leaf*, *flower*, *knife*, *king*.

2. Decline (singular and plural) the German for *this high tree* (masc.) ; and *good wine* (masc.).

3. Write out the German words for 5, 16, 22, 38, 51, 67, 83, 1889 ; the 3rd, 11th, 102nd.

4. Give the 3rd singular and 3rd plural present, imperfect, and perfect indicative active of sein, haben, werden, gehen, stehen, wissen, thun, befehlen, anfangen, verlieren.

5. Write out the perfect and future indicative passive of lieben.

6. Assign the following works to their respective authors, and state to what class of writings each belongs, viz.:—Faust, Wilhelm Tell, Hermann and Dorothea, Minna von Barnhelm, Oberon, Messias, Soll and Haben, die Glocke, Peter Schlemihl.

Friday, 7th March 1890.—2 *to* 4 *o'clock.*

I. Translate into English :—

(*a*) Ein paar Stunden darauf ging der Schulze in die Dorfschenke. Sogleich fiel ihm der junge Mensch ins Gesicht. Er saß ganz allein an einem Tischchen und verzehrte sein Abendbrot. „Ei willkommen!" rief der Schulze, „treffen wir uns hier, guter Freund?" Der junge Mensch

ſtutzte, ſah ihm ſteif ins Geſicht und mußte nicht, woher die Bekanntſchaft kam. „Iſt Er nicht der junge Wanderer," fragte der Schulze, „der dieſen Abend da draußen am Wege das Brett einer Gartenthür feſtgemacht hat?"—„Ja, der bin ich."—„Nun gut, ſo kommt, Nachbar Hans," ſagte der Schulze zu dem Eigentümer das Gartens, der zufällig auch zugegen war, „kommt und bedankt Euch bei dem wackern Fremdlinge. Er hat im Vorbeigehen Eure zerbrochene Gartenthür wieder zurecht gemacht." Nachbar Hans ſchmunzelte, ſagte ſeinen Dank, ſetzte ſich mit dem Schulzen traulich zu dem Fremdling, und alle Gäſte lauſchten auf ihr Geſpräch.

(*b*) „Horch, Marthe, draußen pocht es! Geh, laß den Mann herein!
Es wird ein armer Pilger, der ſich verirrte, ſein.—
Grüß Gott, du ſchmucker Krieger! Nimm Platz an unſerm Tiſch!
Das Brot iſt weiß und locker, der Trank iſt hell und friſch."
„Es iſt nicht Trank noch Speiſe, wonach es not mir thut;
Doch, ſo Ihr ſeid Hans Euler, ſo will ich Euer Blut!
Wißt Ihr, vor Monden hab' ich Euch noch als Feind bedroht:
Dort hatt' ich einen Bruder, den Bruder ſchlugt Ihr tot.
Und als er rang am Boden, da ſchwur ich es ihm gleich,
Daß ich ihn rächen wollte, früh oder ſpät, an Euch!"
„Und hab' ich ihn erſchlagen, ſo war's im rechten Streit,
Und kommt Ihr, ihn zu rächen: wohlan, ich bin bereit!
Doch nicht im Hauſe kämpf' ich, nicht zwiſchen Thür und Wand;
Im Angeſichte deſſen, wofür ich ſtritt und ſtand.
Den Säbel, Marthe—weinſt du?—womit ich ihn erſchlug,
Und ſollt' ich nimmer kommen—Tirol iſt groß genug!"

II. Translate into German :—

Old Rupert was sitting under the apple-tree in front of (say *before*) his house. His grandchildren were eating of the apples, and praised the sweet fruit. Then the grandfather said :—"I must tell you how this tree has come (*to be*, omit) here. Fifty years ago I was standing here, where you now see the tree, and said to our rich neighbour, 'We are so poor, if I had only a hundred dollars I could do something.' He was a wise man, and answered, 'That you can easily get; where you are standing there are more than a hundred dollars in the earth.' I was a foolish boy, and dug a large hole in the ground during the night, but I did not find a single dollar. When the neighbour saw the hole in the morning, he laughed, and said, 'I did not mean it so; but I will give you a little tree which you can plant in that hole, and you will soon get the dollars from it. I planted the young stem, and it has grown to be (say *has become*) this splendid tree, which has brought me much more than a hundred dollars since that time."

III. 1. Give the nominative and genitive singular and nom. plural of

the German for any ten of the following words—*foot*, *hand*, *knife*, *tree*, *town*, *village*, *boy*, *girl*, *heart*, *hour*, *animal*, *branch*, *carriage*, *bottle*, *lion*.

2. Decline, singular and plural, the German for *his good son* and *this little child*.

3. Write out in German the names of the months and the days of the week.

4. Give the first singular and third plural present, imperfect, and perfect indicative active of thun, gehen, sprechen, sein, werden, leiden, beſehen, abſchreiben, verſtehen, weggeben.

5. Write out the perfect and future indicative passive of hören,

6. Write brief notices of any three of—Schiller, Körner, Leſſing, Heine, Uhland.

FIRST PROFESSIONAL EXAMINATION AND FIRST EXAMINATION FOR B.Sc. (*Secs. C, D, F.*)

I. CHEMISTRY.

Monday, 22*nd July* 1889.—11 *to* 1 *o'clock.*

1. What is the composition of felspar, calcspar, fluorspar? From which of these, and by what process, would you prepare pure silica (SiO_2)?

2. Starting in each case with the metal, how would you prepare from it, in the case of mercury, mercurous oxide; in the case of copper, cuprous oxide; in the case of lead, plumbic peroxide; and in the case of iron, ferric oxide?

3. What is the action of nitric acid on alcohol; of caustic potash on chloroform; of nascent hydrogen on aldehyde, and on acetone?

4. How would you distinguish a ferrous salt from a ferric salt; a mercurous salt from a mercuric; a nitrate from a nitrite; a chloride from a fluoride?

5. How many cubic centimetres of hydrogen can 9·2 grams of sodium liberate from water, the barometer standing at 710^{mm} and the thermometer at 12° C.?

H = 1; Na = 23; 2 grammes of hydrogen at 760^{mm} and 0° C. occupy 23 litres.

Monday, 24*th March* 1890.—11 *to* 1 *o'clock.*

1. What is the action of aqueous solution of caustic potash on each of the following substances? Mention in each case whether the action takes place at the ordinary temperature or requires the application of heat. (*a*) Zinc; (*b*) Cupric sulphate; (*c*) Potassium bichromate; (*d*) Benzoic aldehyd; (*e*) Methyl cyanate.

2. How is metallic zinc obtained from zinc sulphide? If the zinc sulphide contains small quantities of cadmium sulphide, how would you obtain pure metallic cadmium from it?

3. Which of the following sulphides are sulphur acids?—Bisulphide of carbon, the sulphides of arsenic, the sulphides of antimony, sulphide of bismuth, the sulphides of tin.

Mention characteristic reactions of sulphur acids and their salts.

4. How is acetone prepared? What is the action of nascent hydrogen on acetone?

5. What volume (in litres) of nitric oxide gas, measured at 0° C. and 760^{mm} can be obtained by acting on 1000 grammes of ferrous sulphate ($FeSO_4$, $7H_2O$) with the necessary quantities of nitric and sulphuric acids?

($H=1$, $O=16$, $S=32$, $Fe=56$; one gramme of hydrogen at 0° C. and 760^{mm} occupies 11.16 litres.)

II. BOTANY.

Monday, 22nd July 1889.—2 *to* 4 *o'clock.*

(*Only four questions to be answered.*)

1. Describe the structure of a bulb. For what purposes is the bulb formed?

2. Write a brief account of the life-history of Aspidium.

3. Compare Mucor with Vaucheria in respect of its nutrition. What structural features in these plants are correlated with their modes of nutrition?

4. In what forms, and in what positions, is food stored up in plants? Describe some of these.

5. What is a seed? How is it formed? Describe the structure of any seed known to you.

6. Describe the structure of a plant-cell. What is the composition of the parts you describe? What is their relative importance?

7. What is a sieve-tube? How does it differ from a dotted duct (*a*) in appearance; (*b*) in construction; (*c*) in position within the plant; (*d*) in function?

8. Describe the process of pollination in any plant known to you, and trace the changes which follow pollination in (*a*) the pollen-grain; (*b*) the embryo-sac up to the formation of the embryo.

Monday, 24th March 1890.—2 *to* 4 *o'clock.*

(*Only four questions to be answered.*)

1. Describe a trachoid of *Pinus* under the following headings:—(*a*) Shape and outline; (*b*) pattern of (*a*) radial wall; pattern of (*b*) tangential wall; (*c*) Construction of wall; (*d*) Use.

2. Write a brief account of the life-history of *Funaria.*

3. Describe the structure of the apex of the root of *Aspidium*. Compare it with that of the apex of the stem. Why do they differ?

4. A cell of *Saccharomyces* is placed in a nutrient solution containing sugar which is left for a prolonged period exposed to the air. What changes will be observed (*a*) in the organism, (*b*) in the sugar solution? Explain them.

5. What is a medullary ray? Describe its (*a*) construction, (*b*) course, (*c*) use.

6. Describe in detail the inflorescence and flowers of *Helianthus*. What is the advantage to the plant of the arrangements you describe?

7. Distinguish from one another the classes,—Filicineæ, Equisitineæ, and Lycopodineæ.

8. Explain the following terms:—Symbiosis, Obligate Parasite, Facultative Parasite, Saprophyte, Epiphyte, Growth-form.

III. NATURAL HISTORY.

Tuesday, 23rd July 1889.—11 *to* 1 *o'clock.*

(*Only* FIVE *Questions to be answered.*)

1. Describe shortly the alimentary system in *Hydra*, *Hirudo*, *Helix*, and *Nephrops*.

2. Describe the pharynx and the structures in the region of the mouth in *Amphioxus*.

3. Give a short account of *Myxine*, referring especially to the structures distinguishing it from other chordata.

4. Contrast the vertebral column in *Amphioxus*, *Gadus*, *Crocodilus*, and *Lepus*.

5. Point out how the *Rodentia*, *Carnivora*, and *Ungulata* differ in their dentition and in the configuration of their alimentary canal.

6. Give the distinctive characters of the order *Marsupialia*, and sketch the geographical distribution of the group.

7. Describe the skeleton of the fore limb of *Raia*, *Columba*, *Balaena*, and *Ovis*.

8. Give a short account of the group Echinodermata, mentioning examples of the principal divisions.

Tuesday, 25th March 1890.—11 *to* 1 *o'clock.*

(*Four, but not more than four, questions to be answered.*)

A. *Only* TWO *of the following.*

1. Give the distinctive characters of the Mollusca, and mention six typical members of the group.

2. How are the Ganoids distinguished from the Elasmo-branchs and Dipnoi?

3. Mention the more important characters of the Proboscidea.
4. Give a short account of the Primates, and mention six typical examples.

B. *Only* TWO *of the following.*

1. Describe and compare (*a*) the respiratory organs and (*b*) the mechanism of respiration in the following :— Lobster, Cockroach, Leech, and Snail.
2. Point out which organs show metameric segmentation in the Earthworm, Lobster, Anodon, Cockroach, and Skate.
3. Describe the condition of the lower jaw and its mode of suspension from the skull in the Skate, Frog, Pigeon, and Rabbit.
4. Describe the urinogenital organs (male and female) of the Frog and of the Rabbit, pointing out the homologous parts.

SECOND PROFESSIONAL EXAMINATION.

IV. ANATOMY.

Friday, 12th July 1889.—10 *to* 12 *o'clock.*

1. Give the successive steps of the dissection necessary to expose the whole length of the omo-hyoid muscle in the neck. Describe its relations to blood-vessels and nerves.
2. Describe the position and form of the Lungs. How do you distinguish the right from the left lung? Give the relations of each to the chest-wall.
3. Describe the naked-eye appearance and microscopic structure of the mucous membrane of the tongue.
4. Describe the position, mode of formation, and relations of the superficial palmar arterial arch, and state what digits it supplies.

Friday, 28th March 1890.—10 *to* 12 *o'clock.*

1. The subject having been tied up in the position for dissecting the perineum, give, step by step, the dissection necessary to expose the under surface of the penis. Define what you mean by the triangular ligament of the urethra.
2. Describe the position of the *cervical* part of the gangliated cord of the sympathetic. Enumerate its branches and its connections with other nerves. Distinguish between the form of the nerve cells of its ganglia and those of the ganglion on the posterior root of a spinal nerve.
3. Name the muscles which act as palmar flexors of the wrist joint, and distinguish between those that act (*a*) primarily, (*b*) secondarily on

that articulation. What relations have they to the anterior annular ligament, and what are their nerves of supply?

4. Give the dissection required to expose, from the front, the entire course of the right internal mammary artery.

V. INSTITUTES OF MEDICINE.

Friday, 12*th July* 1889.—1 *to* 3 *o'clock.*

1. Give a detailed and explanatory account of the events which occur in a cardiac cycle, stating them in their proper sequence, and distinguishing between the essential and accessory events.

2. Describe the microscopical appearances of the Thyroid Gland, and the results of its removal from apes.

3. Describe the process of ossification as it occurs in the inner part of the periosteum.

4. Explain normal binocular vision, and its advantages.

Explain the actions of the muscles that move the eye-balls, and state what is known regarding the nervous mechanism presiding over these movements.

Friday, 28*th March* 1890.—1 *to* 3 *o'clock.*

1. (*a*) Explain what is meant by the term Blood-pressure, and give an account of the distribution of the pressure throughout the vascular system.

(*b*) Describe the ordinary method by which the pressure is graphically recorded, and measured in a systematic artery and in the left ventricle of the heart.

(*c*) Draw tracings, such as are obtained in continuous observations made on the pressure in these situations, and explain the normal rhythmical variations of pressure shown in such tracings.

2. Give an account of the effects of Galvanic currents on striped skeletal muscles, and on a motor nerve trunk—omitting the phenomena comprised in the term "Pflüger's Law of Contraction."

3. (*a*) Make a sketch of a transverse section of human Spinal cord, to show the several tracts in the white matter and the arrangement of the cells in the grey matter, on a level with the third and fourth dorsal nerve.

(*b*) Name the several tracts, state what is known regarding the upward and downward course of their fibres, and explain the manner in which the knowledge has been gained.

(*c*) What is known regarding the functions of the tracts, and how has the knowledge been arrived at?

VI. MATERIA MEDICA.

Saturday, 13th July 1889.—10 *to* 12 *o'clock.*

1. What are the tests for soluble compounds of *Magnesium?* Mention the chief therapeutic uses of salts of Magnesium, and the doses of two of these salts.

2. Describe the pharmacological action of the salts of *Zinc*. State which of them are used externally, and for what purposes.

3. What is an *Expectorant?* In what different ways do expectorants act? Mention four expectorants, and give their doses.

4. What is *Caffeine?* What are its therapeutical uses? What compound of it is officinal, and what are its doses?

5. Define an *Emulsion*. State how a resin may be emulsified.

Saturday, 29th March 1890.—10 *to* 12 *o'clock.*

1. Describe and explain the escharotic action of *caustic potash, nitrate of silver*, and *chromic acid*. How are these substances applied as Caustics?

2. Give the mode of preparation of *Chloride of Ammonium*. State its therapeutic action in the diseases in which it is used, and the doses for each disease.

3. Mention the therapeutic applications and the doses of *Bichromate of Potassium*.

4. Describe the sensible characters of *Antipyrine*. What are its therapeutic effects? In what doses is it given? Mention any undesirable effects which it may produce when used in the treatment of disease.

5. From what plant is *Pilocarpine* obtained? Describe its pharmacological action and therapeutic applications.

VII. GENERAL PATHOLOGY.

Saturday, 13th July 1889.—1 *to* 3 *o'clock.*

1. Mention some of the pathological changes met with in the Skin, under the following headings:—(1.) Tumours; (2.) Inflammation; (3.) Pigmentary changes.

Give a brief account of two examples under each heading.

2. Describe fully the changes which occur as a result of the Ligature of an Artery in its continuity.

3. Describe the naked-eye and microscopic characters of (*a*) Acute, and (*b*) Chronic Inflammation of the Liver.

Saturday, 29th March 1890.—1 *to* 3 *o'clock.*

1. Define the terms "Œdema" and "Dropsy." Give an account of their Pathology.

2. Describe precisely the changes which take place in a thrombus

after its formation—(*a*) In an aneurism of the Aorta; (*b*) On the proximal side of a ligature on a medium-sized vessel.

3. What changes may be produced in the lung as the result of syphilis, congenital or acquired?

FINAL PROFESSIONAL EXAMINATION.

VIII. SURGERY.

Monday, 17*th June* 1889.—10 *to* 12 *o'clock.*

1. What injuries are liable to occur in the lower extremity when a person tries to save himself from falling backwards? Describe the appropriate treatment in each case.

2. Describe the appearances in *Lateral Curvature of the Spine.* At what age does it occur? What are the causes of this condition? State the principles of treatment.

3. Describe, step by step, the operation of *Tracheotomy.* What are the immediate and remote dangers of the operation? In what conditions is this operation performed? Describe the after-treatment, and state when you would remove the tracheotomy tube.

4. What tumours grow from the *lower third* of the *femur?* State the diagnostic characters and treatment in each variety.

IX. MIDWIFERY.

Monday, 17*th June* 1889.—1 *to* 3 *o'clock.*

1. Define Placenta Praevia, and give—
   (*a*) The mechanism of the separation of the praevial portion during labour.
   (*b*) The sources of the hæmorrhage.
   (*c*) The treatment necessary in central placenta praevia, with serious hæmorrhage and incomplete dilitation of the cervical canal.
2. Induction of Premature Labour—
   (*a*) Give the indications for it.
   (*b*) Describe one method of performing it.
   (*c*) What precautions are required in carrying out the operation?
3. Give the symptoms, physical signs, and treatment of a parovarian tumour reaching above the umbilicus.

X. PRACTICE OF PHYSIC.

Tuesday, 18*th June* 1889.—10 *to* 12 *o'clock.*

1. *Gastric Ulcer.* State its symptoms, and what you know of its pathology. How would you diagnose cancerous from simple ulceration? What is the most common seat of simple ulcer, and how would you treat it?

2. Give the chief diagnostic features of Anuerism of the the Arch of the Aorta. Indicate its most frequent modes of termination, and the treatment.

3. *Emphysema of Lungs.* State briefly its morbid anatomy, causes, and their mode of action, symptoms, and physical signs. What are its effects on the heart and other organs, and indicate what you would suggest for its treatment?

4. Name six varieties of dimness of vision, due to disease of the brain, cord, or other internal organs, and describe the clinical features and the morbid anatomy of any two of them.

XI. MEDICAL JURISPRUDENCE.

Tuesday, 18th June 1889.—1 *to* 2 *o'clock.*

I. Period of Death.

Two men were found in a field killed by the same accident. *A* was a strong muscular man, aged about 25; *B* was of feeble muscularity, apparently from 55 to 60 years old. The temperature at the time was about 40° Fahr.

A had well-marked cadaveric rigidity of the jaws, neck, and arms, but not of the legs; *B* had rigidity both of arms and legs.

Upon the above data answer the following questions:—

(*a*) What period had probably elapsed between their being killed and being discovered?

(*b*) What consideration would lead you to believe that one—state whether *A* or *B*—had lived longer after the accident than the other?

(*c*) How might you estimate the number of hours which had elapsed since the death of a person found dead in bed, and covered with bed-clothes?

II. Carbon Vapours.

(*a*) If a person were found dead, what investigation should be made, as regards the room where the body was found, to determine if carbon vapours were the cause of death?

(*b*) What appearances would you expect to find on *post-mortem* examination?

(*c*) Describe fully a special investigation by which you might prove that death was due to carbon vapours.

III. Rape.

State briefly the appearances which you would respectively expect to find on examining the person of the female:—

(*a*) If a virgin (say) of 18 to 20.

(*b*) If a married woman (say) of 30.

(*c*) If a child (say) of 12.

XII. PUBLIC HEALTH.

Tuesday, 18th June 1889.—2 *to* 3 *o'clock.*

I. Vital Statistics.

The population of Edinburgh and Leith, at the census of 1881, was 286,687. At the census of 1871 it was 241,259. How could you (without the use of Logarithms) estimate the population at the end of the first quarter of 1889 (March)?

II. Air of Soils.

1. Explain what is meant by the term *ground air.*

2. State what natural conditions affect the movements of ground air, and describe the nature of the influence upon it exerted by inhabited houses.

3. What precaution should be taken *before* building houses upon sites filled up with town refuse, and more or less impregnated with excremental matters? and what should be attended to *afterwards* in their construction, with a view to preventing the ascent of ground air?

III. Prophylaxis of Small-Pox.

A case of small-pox has broken out in a household comprising a newborn infant and several other inmates at ages from puberty upwards.

1. What prophylactic measures would you immediately urge in regard to the several inmates?

2. Discuss briefly the considerations which would guide you in expressing an opinion as to the probable success of these measures.

XIII. CLINICAL MEDICINE.

Examinations written, oral, and practical, on cases in wards of the Royal Infirmary.

XIV. CLINICAL SURGERY.

Examinations on the Symptoms, Diagnosis, and Treatment of Surgical Cases in the wards of the Royal Infirmary.

XV. PRESCRIPTION WRITING.

Tuesday, 18th June 1889.—3.30 *to* 4 *o'clock.*

*** *Each prescription to be written in Latin, without any contractions, except the directions for the patient, which may be written in English.*

1. Prescribe a mixture containing Chloride of Ammonium and Gelsemium for a case of Facial Neuralgia.

2. Prescribe twenty-four pills containing Quinine, Digitalis, and Belladonna, for the pyrexia of Phthisis.

Fellowships, Scholarships, Bursaries, and Prizes in Medicine.

—o—

I.—FELLOWSHIPS.

I.—THE SYME SURGICAL FELLOWSHIP.

This Fellowship, of the annual value of £105, 17s. 6d., and tenable for two years, is open to competition among Bachelors of Medicine of not more than three years' standing, who shall, in the opinion of the Examiners, have passed a creditable examination for the degree, and who shall present the best Thesis on a Surgical subject giving evidence of original research, or practical talent, whether such Thesis be given in for Graduation or otherwise. The next award may be at the Graduation Ceremonial in August 1891. Theses intended for competition must be lodged with the Dean of the Medical Faculty on or before 30th April 1891. *See* Deed of Foundation, at p. 310 of CALENDAR for 1872-73.

1886. Edward Carmichael, M.D. | 1889. *Alex. Edington, M.B., C.M.*

II.—THE LECKIE-MACTIER FELLOWSHIP.

The Leckie-Mactier Fellowship, of the annual value of £70, is awarded to Bachelors of Medicine of not more than three years' standing, and is tenable for three years. The examinations comprise written reports and commentaries on medical, surgical, and gynecological cases in the University Wards in the Royal Infirmary, and written examinations in Midwifery, Medical Jurisprudence, and Public Health; also oral examinations in Medicine, Surgery, Midwifery, Medical Jurisprudence, and Public Health. Every holder of the Fellowship must, before the expiry of his tenure, transmit to, and if required read publicly in presence of the Medical Faculty, a communication embodying the result of original observation or historical research in some department of medicine. Next appointment may be made in November 1892. *See* Deed of Foundation at p. 365 of CALENDAR for 1880-81.

1886. T. A. Helme, M.B., C.M. | 1889. *Thos. W. Eden, M.B., C.M.*

III.—THE SWINEY LECTURESHIP ON GEOLOGY.

This Lectureship—candidates for which must have taken the Degree of Doctor of Medicine at the University of Edinburgh—is in the patronage of the Trustees of the British Museum, and is of the annual value of £144. The office is tenable for five years, at the expiration of which period the Lecturer is ineligible for the next election. The number of

lectures is not to be less than twelve in each year, nor more than three in the same week. The course is required to be annually delivered between the first of November and the end of July following, at such public places in the United Kingdom as the Trustees shall approve. The public are admitted without fee. The Lecturer is required at the termination of each course to deposit a copy, or full extract of such course of lectures, with the Principal Librarian of the British Museum, to whom application may be made for further particulars.

IV.—FREELAND BARBOUR FELLOWSHIP.

This Fellowship is of the value of £100, and is open to award, in each alternate year, to the Bachelor of Medicine and Master in Surgery who has gained the highest collective marks in Anatomy, Physiology, and Pathology in the Professional Examinations, and who is prepared to devote not less than one year to original research in Midwifery or diseases of women, in any of the Laboratories or Practical Departments of the University of Edinburgh. The next award will be made in July 1890. (*See* Deed of Foundation at page 517 of CALENDAR for 1889-90.)

1888. *John David Williams, M.B., C.M.*

THE WILLIAM DICKSON TRAVELLING FUND.

This is a fund for the purpose of assisting Graduates of any Faculty, of not more than three years' standing, to travel for the purpose of study or research. For particulars, see page 228.

II.—SCHOLARSHIPS.

I.—ETTLES SCHOLARSHIP IN MEDICINE.

This Scholarship was founded in 1868 by Miss Mary Ettles of Inverness, and is of the annual value of about £35. It is awarded annually to the Bachelor of Medicine and Master in Surgery of the University of Edinburgh, whom the Faculty of Medicine may consider the most distinguished of that year. (*See* Deed of Foundation, at page 242 of CALENDAR for 1868-69.)

1885. H. J. Stiles, M.B., C.M.
1886. F. T. King, M.B., C.M.
1887. G. O. C. Mackness, M.B., C.M.
1888. T. W. Eden, M.B., C.M.
1889. *Eustace Graham Pilgrim, M.B., C.M.*

II.—SIBBALD MEDICAL SCHOLARSHIP.

This Scholarship is of the annual value of £40. *First*, The Scholarship shall be bestowed on, and held by, a Student in the Faculty of Medicine in the University of Edinburgh, *who does not hold any other Scholarship or Bursary*, and shall be tenable for three years, during

which period the Scholar shall complete the prescribed course of medical study required from Candidates for the degree of Bachelor of Medicine. *Second*, The Scholarship shall be bestowed upon the Student obtaining the highest place by Competitive Examination, and shall be open to all Candidates who have not previously been Students of Medicine in any other School or University, and who have attended Medical Classes in the University of Edinburgh, for *not less* than one Winter and one Summer Session, and for *not more* than one Winter and two Summer Sessions. The Competitive Examination shall be in Chemistry, Botany, and Natural History, and shall be conducted in such manner as the Senatus Academicus shall, in concurrence with the Trustees, prescribe. The next competition may take place in October 1892. Application to be made to Messrs MACKENZIE, INNES, & LOGAN, W.S., 23 Queen Street, Edinburgh.

1886. Carstairs C. Douglas | 1889. *Robert Hutchison*

III.—THOMSON SCHOLARSHIP.

The Thomson Scholarship, value £40, tenable for four years, open to matriculated students commencing their first Winter Session in Medicine. The examination is on Botany, Zoology, and Elementary Mechanics. The Scholarship is awarded to the candidate who shall obtain the highest number of marks in the examination. The Trustees, however, reserve power to themselves to withhold the appointment should none of the candidates obtain a sufficiently high percentage of the marks in the examination. Candidates must send in their names to the agents for the Trust before the first day of October in the year in which there is a competition for the Scholarship. Students of the name of Thomson or Traquair, or those who are natives of the town or county of Dumfries, or of the city of Edinburgh, have a preference. Candidates claiming such preference must intimate their names to the Agents for the Trust at least one clear week before the examination. The next appointment may be made in October 1890. For other particulars, application to be made to Messrs Traquair, Dickson, & Maclaren, W.S., 11 Hill Street, Edinburgh, the Agents for the Trustees.

1887. *Robert Brown*

IV.—COLDSTREAM MEMORIAL MEDICAL MISSIONARY SCHOLARSHIP.

The Coldstream Memorial Medical Missionary Scholarship was founded in memory of the deceased John Coldstream, M.D., F.R.C.P.E. Value £25, tenable for four years. The holder must be a first year's Medical Student, who intends to devote himself to the life of a Medical Missionary at home or abroad. He must be approved of by the awarders, and pass the preliminary examination before beginning his

studies. Next award in 1891. A preference is given to students connected with the Edinburgh Medical Missionary Society. A full copy of the conditions can be had on applying to John P. Coldstream, W.S., 6 Buckingham Terrace, Edinburgh. *See* Conditions in CALENDAR for 1879-80, p. 357.

1887. *James W. Dawson*

V.-XII.—VANS DUNLOP SCHOLARSHIPS.

Eight Scholarships, of £100 each, tenable for three years. Not more than one at a time can be held by the same person.

5. *One* is awarded in March to the Candidate who, at either the March or the preceding October Medical Preliminary Examination, has obtained the highest number of marks in the Subjects required to enable him to appear for a Professional Examination, provided (1) that he has not already passed the said Preliminary Examination; and (2) that, in the event of his having passed an equivalent examination and presenting himself for the Medical Preliminary Examination, he shall waive all right to admission to the Faculty of Medicine except through the ordinary Medical Preliminary Examination of this University. The next award may be made in March 1893.

1887. W. E. Fisher, H. S. W. W. Jones, B.Sc.—equal
1890. *William Anderson Stephen*

W. D. Adams gained the first place in the Examination, but was disqualified by the then existing regulations.

6. One is awarded for subjects of first year's study, viz., Botany, Zoology, Chemistry, and Anatomy, to the Student who, having attended, for the first time, a systematic course of Lectures on each of the above Subjects during the preceding Winter Session, and also during either the preceding or current Summer Session, obtains the highest number of marks collectively in the University Class Examinations in those Subjects; provided that he has gained not less than 60 per cent. of the marks in each of all the Subjects. The successful Candidate shall continue his medical studies in this University during his tenure of the Scholarship. The next award may be at the end of July 1890.

1887. *J. W. Bone and G. Elder—equal*

7. One is awarded for subjects of second year's study, viz., Physiology and Surgery, to the Student who, during the Winter Session, shall have attended, for the first time, a systematic course of Lectures on each of these Subjects, and who shall have obtained the highest collective number of marks in the Class Examinations; provided that he has gained not less than 60 per cent. of the marks in each of the two subjects. The successful Candidate shall continue his medical studies in the University during at least two years of his tenure of the

Scholarship, whilst the remaining year must be passed in study, either in this University, or in some other School of Medicine to be approved by the Faculty of Medicine. The next award may be at the end of March 1893.

1887. John W. Crerar | 1890. *Louis Godfrey Irvine*

8-10. Three Scholarships, of which one is awarded annually at the end of the third Winter of Medical Study to the Student who, after having attended within the University the Subjects of Examination, shall obtain the highest number of marks in an Examination, specially conducted for the purpose, on Anatomy, Physiology, Materia Medica, and Pathology. The successful Candidate is required to continue his studies in this University, for at least the first year of his tenure of these Scholarships, and during the remaining period to prosecute research in some branch of study comprised in the Medical curriculum. The award is made annually in April. See Excerpt from Will of Dr Vans Dunlop at p. 380 of CALENDAR for 1880-81.

1886. G. O. C. Mackness, B.A.
1887. Robert Muir, M.A.
1888. Percy C. Evans
1889. Robert Main Horne
1890. *E. B. Fuller*

11. One in Chemistry and Chemical Pharmacy.

(1.) The Subjects of Examination are—

(*a*) Inorganic and Organic Chemistry, and the connection between the Chemical and Physical character of Substances.

(*b*) Qualitative and Simple Quantitative Analysis of Inorganic Substances, and the Preparation and Testing of the Chemical Substances in the British Pharmacopœia.

(2.) The Examination in subjects (*a*) is similar, and held at the same time, as that for the Second B.Sc. Examination. The Examination in subjects (*b*) is conducted practically in the Laboratory.

(3.) The Competition is open to all Students of the University, from the second to the sixth year (inclusive) of their attendance, and the next may take place in April 1891.

1888. *Francis Maitland Gibson and Hugh Marshall—equal.*

12. One in Natural History, including Geology and Botany.

(1.) The subjects Natural History, Geology, and Botany are coequal in the Examination, and the Examination in each of the three subjects is similar to that for the Second B.Sc. Examination, and consists of two parts—a Written Examination extending over not less than three hours, and a Practical Examination with specimens.

(2.) The next Examination will be held in April 1892, at the same time as the Second B.Sc. Examination.

(3.) The Competition shall be open to all Students of the University, from the second to the sixth year (inclusive) of their attendance.

1886. Malcolm Laurie, B.Sc., and George A. Ramage—equal
1889. *J. Graham Kerr*

XIII.—THE MURCHISON MEMORIAL SCHOLARSHIP.

This Scholarship consists of the annual proceeds of about £1000 awarded in alternate years in London and Edinburgh for proficiency in Clinical Medicine. Candidates must be registered medical students who have attended for not less than four nor more than six years at Hospitals and classes at Edinburgh or London, recognised by the University of Edinburgh or the Royal College of Physicians of London. The competition in 1890 will be held in London, and that in 1891 will be held in Edinburgh.

1886. J. S. Hutton, L.R.C.P. and M.R.C.S.
1887. W. S. Colman, M.B.
1888. H. T. Tylden, M.A., M.B.
1889. Arthur J. Whiting, M.B., C.M.
1890. *Bedford Pierce, M.B.*

XIV.—THE STARK SCHOLARSHIP IN CLINICAL MEDICINE.

This Scholarship of £112 is tenable for one year, and is for the encouragement of the study of Clinical Medicine. It is open to competition among all matriculated students of the University who are or have been in attendance at the University Class of Clinical Medicine, and to Bachelors of Medicine of the University of not more than eighteen months' standing who have attended this class. It is open to competition every second year alternately with the competition in Edinburgh for the Murchison Memorial Scholarship. The Examination, oral and in writing, includes (*a*) Examination of Patients; (*b*) Questions on Therapeutics and Pathology; (*c*) Examination of Specimens. Each holder of the Scholarship will be required to devote his time in the wards of the Professors of Clinical Medicine to original investigation or other work directly connected with Clinical Medicine; to report his proceedings every three months to the Professors of Clinical Medicine; and, within a reasonable time after the expiry of his tenure of the Scholarship, to present to the Faculty of Medicine a written statement of the results of his investigations or other work. This Scholarship cannot be held along with any other Fellowship, Scholarship, or Bursary in a Scottish University. The next competition will take place in July 1890. *See* Deed of Foundation at p. 427 of CALENDAR for 1884-5.

1886. F. H. Jeffcoat, M.B., C.M. | 1888. *Jas. Brown Bird, M.B., C.M.*

XV.—BUCHANAN SCHOLARSHIP.

This Scholarship consists of the proceeds of £1000, given by Mrs James Buchanan, who endowed the Buchanan Medical Ward in the

Royal Infirmary. It is awarded annually to the Graduate in Medicine who shows the highest proficiency in Midwifery and Gynecology.

1886. J. W. Talent, M.B., C.M.
1887. W. F. Wright, M.B., C.M.
1888. W. Buchanan, M.A., M.B., C.M.
1889. *Geo. Wilkinson, M.B., C.M.*

XVI.—THE JAMES SCOTT SCHOLARSHIP.

This Scholarship, founded by Mrs Mary Ann Scott or Thomson of Hawick, of the value of £45, is awarded annually at the Graduation Ceremonial in Medicine in August for proficiency in Midwifery. The award is based upon the results of the Competitive Examinations in the Class of Midwifery, upon the character of the records of Cases of Midwifery attended by the Candidate at the Royal Maternity and Simpson Memorial Hospital, and upon the position obtained by him at the Final Examination for Degrees in Medicine. The Scholarship is for one year, but may, in special circumstances, be continued for another year. *See* Deed of Foundation, p. 410, CALENDAR, 1883-84.

1886. Joseph Tillie, M.B., C.M.
1887. J. G. Havelock, M.B., C.M.
1888. Thos. W. Eden, M.B., C.M.
1889. *James Lackie, M.B., C.M.*

XVII.—HOPE PRIZE SCHOLARSHIP.

The Hope Prize Scholarship has been instituted in connection with the Chemical Laboratory of the University, and is of the value of about £25. It is awarded annually in March, to the student who, intending to continue his studies and attendance in the Chemical Laboratory, has, in the opinion of the Professor of Chemistry, most distinguished himself during the previous session in the Chemical Laboratory. He shall be bound, during the succeeding Summer and Winter Sessions, to assist the Professor of Chemistry in the Chemical Laboratory, and shall be subject to his directions as to the nature and amount of the assistance to be so given. For further particulars see CALENDAR, 1887-88, p. 424.

1886. T. R. Marshall
1887. Prafulla C. Ráy, D.Sc.
1888. John Simpson Ford
1888. Lapsed Scholarship, Andrew King
1889. William Cossar Mackenzie
1889. Lapsed Scholarship, Thomas S. Murray
1890. *Alexander Dingwall White*

XVIII.—THE MOUAT SCHOLARSHIP IN THE PRACTICE OF PHYSIC.

This Scholarship, which will consist of the annual proceeds of about £1500 given by Frederic John Mouat, M.D., of the Local Government Board, London, formerly Professor of Medical Jurispru-

dence in the University of Calcutta, has been founded in connection with the class of Practice of Physic, but is not to be open for competition until the death of two liferenters.

XIX.—MACKAY SMITH SCHOLARSHIP IN CHEMISTRY.

This Scholarship is of the annual value of £25, tenable for two years, and is open for competition to Students who have attended the Class of Chemistry in this University. The successful Candidate is bound to attend the Class of Chemistry, or to prosecute the study of Chemistry during at least one year of his tenure of the Scholarship, in such way as the Senatus Academicus may direct or approve. The next Examination will take place at the end of Session 1891-92.

1887. Hugh Marshall, B.Sc.
1888. Martin Hugh Foye
1890. *R. W. Briggs*

III.—BURSARIES.

No of Foundation.	Year of Found.	Name of Founder.	Total Annual Income.	No. of Bursars.	For Years.	Annual Allowance to each Bursar.	Patrons.
I.	1864	Dr Abercrombie, Cape Town.	£20 0 0	1	4	£20 0 0	Governors of George Heriot's Trust.
II.	1871	Dr J. R. Sibbald's Trustees.	About £150 0 0	5	4	30 0 0	Trustees of Dr J. R. Sibbald.
III.	1873	Dr Mackie's Trustees.	60 0 0	2	2	30 0 0	Professors of Fac. of Med. in Univ., Edin.
IV.	1873	Mr Grierson of Ogscastle's Trustees.	80 0 0	4	3	20 0 0	Senatus.
V.	1878	Dr Andrew Thomson	200 0 0	8	4	25 0 0	Trus. of Dr Thomson.
VI.	1878	William Mackenzie	42 10 0	2	1	21 5 0	Senatus.
VII.	1878	John Aitken Carlyle	56 0 0	2	1	28 0 0	Senatus.
VIII.	1882	Mrs Ronald of Liverpool	80 0 0	2		About 40 0 0	Senatus.
IX.	16—	George Heriot. Remodelled 1887	180 0 0	6	4	30 0 0	Governors of George Heriot's Trust.

Medical Bursaries.

I. *Abercrombie Bursary*—Open by competition, in the event of more than one candidate coming forward, to Students who have been brought up in Heriot's Hospital, and have finished their course as Heriot Bursars, to aid them in further prosecution of their studies for any of the learned professions. Students in the Faculty of Medicine to be always preferred. Candidates are referred to the Treasurer of Heriot's Hospital, St Andrew Square, Edinburgh. *Bursar—David G. Douglas.*

II. *Sibbald Bursaries.*—The following regulations have been adopted for these Bursaries:—*First*, The Bursaries, each tenable for three years, are available to Students in the Faculty of Arts, Medicine, Law, or Divinity. *Second*, The Bursaries to be held by Students entering the University who have not previously attended any University in the United Kingdom or elsewhere, *and who do not hold any other Bursary or Scholarship*, but no objection to a Candidate that he has, during the previous Summer Session, attended any of the Classes in the University of Edinburgh required by the Faculties of Medicine or Law. *Third*, The Bursaries competed for by examination at the commencement of each Winter Session, and in every case bestowed upon the Candidates in their order of merit. Application to be made to Messrs Mackenzie, Innes, & Logan, W.S., 23 Queen Street, Edinburgh.

III. *Mackie Bursaries.*—These Bursaries are awarded to Students of Medicine of the University, one of which is open to Students who have completed their First Annus Medicus, and the other to Students who have completed their Second Annus Medicus, and who are, in the opinion of the Faculty of Medicine, in such pecuniary circumstances as to require assistance. *Bursars*—1888, *C. J. W. Dickson*, *D. Leslie Murray.*

IV. *Grierson Bursaries.*—Candidates from the parishes of Crawford or Leadhills, about to commence their Medical Curriculum, who have passed in the University of Edinburgh a satisfactory examination in the preliminary subjects required by Article I. of the Ordinances for Graduation in Medicine, who have been diligent students, and who require pecuniary aid to enable them to pursue their studies, have a preference. In the case of more candidates than one, the Bursary shall be awarded to the best qualified, on examination in the subjects above referred to.

Failing the appointment of preferential candidates, the Bursary shall be tenable for periods of one year only, during four successive years, in manner following, viz.:—The 1st year Bursary shall be awarded to the student who has taken the highest place in the whole subjects required by Ordinance for the preliminary examination which has to be passed before the first professional examination, provided (1) that he has not already passed the said preliminary examination; (2) that at the date of the examination he has not completed his twenty-first year; and (3) that, in the event of his having passed an equivalent examination and presenting himself for the Medical Preliminary Examination, he shall waive all right to admission to the Faculty of Medicine except through the ordinary Medical Preliminary Examinations of this University, which have to be passed before the First Professional Examination. The 2d year Bursary shall be awarded by competitive examination to the student commencing the Second Winter Session, who having already passed the subjects of the Preliminary Examination required for Graduation in Medicine, shall pass the best examination in the subjects of Chemistry, Botany, and Natural History. The 3d year Bursary shall be awarded by competitive examination to the student commencing the Third Winter Session who, having already passed the First Professional Examination, shall pass the best examination in the subjects of Anatomy and Physiology. The 4th year

Bursary shall be awarded by competitive examination in the subjects of Materia Medica and Pathology. *Bursars*—1889, *first year, John Tennant, M.A.; second year, A. M. Easterbrook; third year, C. C. Easterbrook, M.A.; fourth year, T. H. Milroy.*

V. One *Thomson Bursary* is awarded at each of the Preliminary Examinations held in Spring and Autumn, to the Candidate who, being about to commence his Curriculum, takes the highest place in a sufficient number of subjects to enable him to appear for Professional Examination: provided (1) that he has not already passed the said Preliminary Examination; and (2) that, in the event of his having passed an equivalent examination and presenting himself for the Medical Preliminary Examination, he shall waive all right to admission to the Faculty of Medicine except through the ordinary Medical Preliminary Examinations of this University which have to be passed before the First Professional Examination. Students of the name of Thomson or Traquair, or those who are natives of the town or county of Dumfries, or of the city of Edinburgh, have a preference. Candidates claiming a preference must intimate their names to the Agents for the Trust, at least one clear week before the Examination. For other particulars, application may be made to Messrs Traquair, Dickson, & Maclaren, W.S., 11 Hill Street, Edinburgh, the agents for the Trust. *Bursars*—1886-87, *W. S. Kerr;* 1887-88, *Hugh Walker, James V. Paterson;* 1888-89, *Alfred Cowper, William B. Craig;* 1889-90, *W. D. Adams, W. A. Potts.*

VI. *Mackenzie Bursaries*, open to Students in the Junior and Senior Anatomy Classes, who shall display the greatest industry and skill in Practical Anatomy, awarded at the end of each Session. *See* CALENDAR for 1879-80, p. 353. *Bursars*—1890, Senior, *C. Hubert Bond*, one half, and *A. O'Donoghue Rowan*, the other half; Junior, *H. G. Sturrock*, one half, and *C. G. Thompson*, the other half.

VII. *John Aitken Carlyle Bursaries*, one open to Students of the first year, awarded after examination in Anatomy and Chemistry, the other to Students of the second year, awarded after examination in Anatomy and Physiology. *See* CALENDAR for 1879-80, p. 350. *Bursars*—1890, Senior, *Percival Vincent Locke;* Junior, *J. P. Stewart.*

VIII. The *Anderson Bursaries* have been founded by Mrs Ronald of Liverpool, and will come into operation on the death of an annuitant. For Deed of Foundation, *see* CALENDAR 1882-83, p. 396.

IX. The *Heriot Bursaries* are for Students unconnected with the Hospital, entering upon a regular Curriculum with a view to graduation. (For remodelled scheme, see CALENDAR, 1887-88, p. 498.) For subjects of Examination, &c., see under Bursaries open in Faculty of Arts.

IV.—PRIZES.

I.—NEIL ARNOTT PRIZE FOR EXPERIMENTAL PHYSICS.

This Prize, of the value of about £42, presented to the University by Dr Neil Arnott of London, is awarded to the Candidate who shall pass with the greatest distinction the Ordinary Examination in Natural Philosophy for the Degree of M.A. Candidates must have been Students of Medicine of this University during either a summer or a winter session; and the successful candidate must continue a Student of Medicine at this University during the next Winter Session, failing which, the prize will be forfeited and assigned to the competitor next in merit. No student can appear for examination after the completion of his third *annus medicus;* and no candidate shall be allowed to offer himself more than once.

In the event of a competitor, qualified as above, not coming forward, the prize will be awarded to a Candidate for a Degree in Arts who shall pass with most distinction the ordinary examination in Natural Philosophy. The next award will be made in October 1890. (*See* Deed of Foundation at p. 274 of CALENDAR for 1870-71.)

1885. David Traill, M.A.
1886. W. E. Fothergill, M.A.
1887. T. W. E. Fisher
1888. H. S. W. Jones
1889. *Andrew Walker*

II.—HOPE CHEMISTRY PRIZE.

This prize was founded by the late Professor Thomas C. Hope in 1844, for the promotion of the Study and Science of Chemistry in the University, in such manner as the Principal and Professors may appoint. It is competed for biennially, at a special examination open to all Students of the University who have worked for eight months or for two Summer Sessions, in the Chemical Laboratory of the University, and who are not more than twenty-five years of age. The examination is in Chemistry, and is conducted by the Professor of Chemistry, in conjunction with two Examiners appointed by the Senatus, and is practical as well as written. The successful Candidate is to spend the succeeding academical year in working in a Laboratory or Laboratories, under conditions approved by the Senatus, and to receive £100, in such sums, and at such intervals, as may be appointed by them.

No person can hold the Hope Chemistry Prize more than once.

A Competition for this Prize will be held in July 1891; Candidates must send in their names to the Professor of Chemistry prior to 20th June 1891.

1887. James Walker, B. Sc.
1889 { W. C. Mackenzie, B.Sc. / T. R. Marshall, D.Sc. } equal

III.—THE ROBERT WILSON MEMORIAL PRIZE.

This Prize was founded by John Wilson of South Bantaskine, in memory of his son, Robert Wilson, and is of the value of £8, 16s. 2d. It

is annually awarded at the close of the Winter Session to the student in the senior Chemistry Class who takes the highest honours. See Deed of Foundation at p. 351 of CALENDAR for 1876-77.

1886. C. C. Douglas
1887. John W. Bone
1888. H. S. Wansbrough Jones
1889. F. C. M. Hutchinson
1890. *Edward Crarer*

IV.—THE ELLIS PRIZE FOR PHYSIOLOGY.

This Prize consists of the proceeds of a sum of £500 bequeathed by the late Daniel Ellis, Esq., to the Principal and Faculty of Medicine of the University of Edinburgh, accumulated for three or five years. Value about £25 per annum. It is awarded for the best Essay or Treatise on some subject of Animal or Vegetable Physiology proposed by the Faculty for competition to Students or Graduates of five years' standing. The next award may be made in April 1893. Subject—"The Functions of Wood."

V.—PRIZES FOR THESES.

Gold Medals, each of the value of £10, are awarded annually on the day of graduation to Doctors of Medicine whose Theses are deemed worthy of that honour.

VI.—THE GOODSIR MEMORIAL PRIZE.

This Prize was founded in 1872 by the subscribers to the fund for a memorial of the late Professor John Goodsir. It is in the patronage of the Principal, Dean of the Faculty of Medicine, and Presidents of the Royal Colleges of Physicians and Surgeons of Edinburgh, and is for the encouragement of the study of Anatomy and Physiology. It is given triennially, and is of the value of £60. It is open to all Graduates in Medicine of the University of not more than three years' standing at the time of the competition, and to Licentiates of the Colleges of Physicians or Surgeons of Edinburgh of a like standing, who have attended within the University the same number of classes as are required for the Degree of M.B. The Prize is awarded for the best Essay containing results of original investigations in Anatomy, Human and Comparative, either Normal, or Pathological, or in Experimental Physiology.

The next award may be made in August 1892, and competing Dissertations must be given in to the Professor of Anatomy not later than the 30th April previously. *See* Deed of Foundation at p. 314 of CALENDAR for 1872-73.

1885. Ernest Frederic Neve, M.D. | 1889. *H. F. Waterhouse, M.D.*

VII.—THE WIGHTMAN PRIZE IN CLINICAL MEDICINE.

This Prize of £10, 10s. was founded by Mrs E. Wightman, in memory of her son, J. T. Wightman, M.B., C.M., and is annually awarded at the close of the Summer Session to the student attending the Class of Clinical Medicine for the best Dissertation on any subject presented by the Faculty of Medicine, or for the best Report and Commentary on cases which have during the previous Winter and Summer Sessions been treated in the University Clinical Wards in the Royal Infirmary. Three months' notice of subject is given by the Faculty of Medicine. *See* Deed of Foundation at p. 348 of CALENDAR for 1876-77.

The Prize, which is open to members of the Clinical Class of either Winter 1890-91 or Summer 1891, will be awarded for the best report and commentary on cases. The Essays to be given in on 6th July.

1885. Chas. J. Lewis, M.B., C.M.
1886-87. Not awarded
1888. A. J. Whiting, M.B., C.M.
1889. Not awarded

VIII.—THE BEANEY PRIZE.

This Prize of £37, 10s. was founded in 1878 by James George Beaney, Esq. of Melbourne. It is awarded at the Graduation Ceremonial in Medicine to the Graduate in Medicine and Surgery of the year who, having attended within the University courses on Anatomy, Surgery, and Clinical Surgery qualifying for Graduation, obtains the highest number of marks during his examinations in these subjects for the Degrees of Bachelor of Medicine and Master in Surgery. The Senatus has the power of withholding the Prize in the event of no Student passing the above examinations with sufficient merit. *See* Deed of Foundation at p. 371 of CALENDAR for 1878-9.

1885. H. J. Stiles, M.B., C.M.
1886. F. H. Jeffcoat, M.B., C.M.
1887. A. A. Brueré, M.B.C.M. } equal
1887. W. A. Turner, M.B.C.M. } equal
1888. J. C. Webster, M.B., C.M.
1889. *Eustace Graham Pilgrim, M.B., C.M.*

IX.—THE CAMERON PRIZE.

This Prize was founded in 1878 by the late Dr Andrew Robertson Cameron, of Richmond, New South Wales. It consisted of the annual proceeds of a sum of £2000, to be given annually "to the practitioner or member of the medical profession who shall be adjudged to have made the most valuable addition to Practical Therapeutics during the year preceding, and in determining such question, the word Therapeutics shall be taken in its widest sense as including every agent, or agency capable of influencing the human body in the maintenance or improvement of health, avoidance or cure of diseases, or the alleviation of suffering."

The regulations have been remodelled by the Educational Endowments (Scotland) Commission, and the annual proceeds, which,

after defraying the necessary expenses, amount to about £90, may be awarded annually to a person who in the course of the five years immediately preceding has made any highly important and valuable addition to Practical Therapeutics. The Prizeman is required to deliver a lecture or course of lectures on the addition to Practical Therapeutics so made by him, or to publish an account of such addition in such manner as the Senatus may prescribe. The prize will not be awarded if, in the opinion of the Senatus, no addition to Practical Therapeutics has been made within the said period of five years of sufficient importance and value to justify the awarding of the prize. The prize is awarded annually at the Graduation Ceremonial in August. See Remodelled Regulations, p. 497 of CALENDAR for 1888-89.

1889. *Mons. Pasteur.*

X.—THE DOBBIE SMITH PRIZE IN BOTANY.

This prize, which consists of a Gold Medal, is open to competition each alternate year to all Matriculated Students of the year of the award, for an Essay on a Botanical subject. The subject of the next competition is an original investigation "On the Structure, Development, and Life History of any British Flowering Plant;" and the memoir is to be accompanied with a series of illustrative specimens. Competing Essays to be sent to the Dean of the Faculty of Medicine on or before the 1st of July 1891. The prize will be awarded to the successful competitor at the Graduation Ceremony of August 1891.

1887. James A. Terras | 1889. *Gustav Mann*

XI.-XXI.—THE GUNNING VICTORIA JUBILEE PRIZES.

Dr Gunning, of Edinburgh and Rio de Janeiro, has founded Eleven Post-Graduation Prizes of the value of £50 each, and each recurring triennially, viz. :—(1) The Monro prize for Anatomy; (2) The Bell prize for Physiology; (3) The Edward Forbes prize for Zoology, &c.; (4) The Hutton Balfour prize for Botany; (5) The Joseph Black prize for Chemistry; (6) The Christison prize for Materia Medica; (7) The Lister prize for Surgery; (8) The Gregory prize for Practice of Physic; (9) The John Thomson prize for Pathology; (10) The Simpson prize for Obstetrics; (11) The Alison prize for Public Health and Medical Jurisprudence. Candidates must be either Bachelors of Medicine or Bachelors of Science of this University of not more than three years' standing. The prizes will be awarded with the approval of the Senatus for (1st) either (*a*) Competitive Essays written specially for the prizes, or (*b*) Theses submitted for Graduation; or (2nd) for original research conducted under supervision of the Professor in the department in which the prize is awarded. The prizes in Anatomy, Chemistry, and Practice of Physic will be awarded in 1890; in Physiology, Botany, Surgery, and Pathology, in 1891; and in Zoology, Materia Medica, Obstetrics, Public Health and Medical Jurisprudence,

in 1892. Competitive Essays are required to be lodged with the Dean of the Faculty of Medicine on or before 30th April of the year in which each prize is to be awarded, and the successful competitors will be announced annually at the Graduation Ceremonial in Medicine.

1887. Hugh Marshall, B.Sc. (Ch.)
,, W. C. S. Miller, M.D. (An.)
,, R. W. Philip, M.D. (P.P.)
1888. G. A. Stewart, M.A., D.Sc. (Physiology)
,, E. F. Neve, M.D. (Surgery)
1889. *Philip J. White, M.B., C.M.* (Zoology)
1889. *Joseph Tillie, M.D.* (Materia Medica)
,, *Robert Muir, M.B.* (Pathology)
,, *James A. Blair, M.B., C.M.* (Public Health and Medical Jurisprudence)
,, *John William Ballantyne, M.D.* (Obstetrics)

XXII.—ANDERSON HENRY PRIZE.

The Prize was founded by Isaac Anderson Henry of Woodend, and consists of the proceeds of a sum of £300 accumulated for three years. It is awarded for the best and approved essay on a botanical subject proposed by the Professor of Botany, the Curator of the Royal Botanic Garden, and the President of the Botanical Society of Edinburgh, for competition to students in the Class of Botany in the University of Edinburgh, during any of the three years preceding the date of the award. The first award may be made in August 1890: subject—"The relations of plants to their supply of water, and the effects of these relations upon the surrounding of the plants." Competing Essays to be sent to the Dean of the Faculty of Medicine on or before 1st July 1890.

Of the foregoing Fellowships, Scholarships, Bursaries, and Prizes, the following are open to competition during the Summer Session 1890, and Winter Session 1890-91.

FELLOWSHIPS.

1. *The Syme Surgical Fellowship* (No. I. p. 447).
2. *The Freeland Barbour Fellowship* (No. IV. p. 448).
3. *The William Dickson Travelling Fund for Research* (p. 448).

SCHOLARSHIPS.

1. *The Stark Scholarship in Clinical Medicine* (No. XIV. p. 452).
2. *A Hope Prize Scholarship in Chemistry* (No. XVII. p. 453).

3, 4, 5. *Three Vans Dunlop Scholarships.*—One in Botany, Zoology, Chemistry, and Anatomy (No. 6, p. 450); one in Anatomy, Physiology, Materia Medica, and Pathology (No. 8, p. 451); and one in Chemistry and Chemical Pharmacy (No. 11, p. 451).

6. *The Murchison Memorial Scholarship in Clinical Medicine* (No. XIII. p. 452).

7. *The Buchanan Scholarship in Midwifery and Gynecology* (No. XV. p. 452).

8. *The James Scott Scholarship in Midwifery* (No. XVI. p. 453).

9. *The Ettles Scholarship in Medicine* is awarded annually to the most distinguished Bachelor of Medicine and Master in Surgery of the year (No. I. p. 448).

10. *The Thomson Scholarship in Botany, Zoology, and Elementary Mechanics* (No. III. p. 449). For particulars apply to Messrs Traquair, Dickson, & Maclaren, W.S., 11 Hill Street, Edinburgh.

BURSARIES.

1, 2. *Two Sibbald Bursaries*, value £30 each (No. II. p. 455).

3-9. *Seven Heriot Bursaries*, each of the annual value of £30, and tenable for three years, are open to students matriculating for the first time in the University. Applications to be sent, not later than 1st October in each year, to the Governors of George Heriot's Trust, from whom all relative information may be had on application (No. IX. pp. 454, 456).

10, 11. *Two Thomson Bursaries*, value £25 each, tenable for four years. One to be competed for each March and October, at the Preliminary Examination. Preference given to Candidates of the names of Thomson or Traquair, or to natives of the town or county of Dumfries, or of the city of Edinburgh. Candidates for the Thomson Bursaries and Scholarship to give their names to Messrs Traquair, Dickson, & Maclaren, W.S., 11 Hill Street, Edinburgh (No. V. pp. 454, 456).

12-16. *Five Grierson Bursaries* of £20 a-year each. Natives of the Parishes of Crawford and Leadhills have a preference. In the absence of preferential Candidates each Bursary will be tenable for one year only, and will be open to competition. *One Bursary* for Preliminary Subjects. *Two Bursaries* for Chemistry, Botany, and Natural History. *One Bursary* for Anatomy and Physiology. *One Bursary* for Materia Medica and Pathology. The awards will be made at the beginning of the Winter Session 1890-91. For further particulars see No. IV. pp. 454, 455.

17, 18. *Two Dr John Aitken Carlyle Bursaries* of £28 each. One to a first year's Student in Anatomy and Chemistry; One to a second year's Student in Anatomy and Physiology (No. VII. pp. 454, 456).

19, 20. *Two Mackenzie Bursaries* of £21, 5s. each. One in the Junior Class of Practical Anatomy, and one in the Senior Class of Practical Anatomy (No. VI. pp. 454, 456).

21, 22. *Two Mackie Bursaries*, each of the value of £30, and tenable for two years, one open to Students who have completed their first *annus medicus*, and the other to Students who have completed their

second *annus medicus*, and who are, in the opinion of the Faculty of Medicine, in such pecuniary circumstances as to require assistance. The next award will be made at the commencement of the Winter Session 1890-91.

Competitors for the above Bursaries, excepting those awarded for the subjects of Preliminary Examination, must have studied the subjects of Examination at the University of Edinburgh. No Fellowship, Scholarship, or Bursary, with the exception of the Ettles Scholarship, can be held along with any other Fellowship, Scholarship, or Bursary.

PRIZES.

The Medical Faculty Medals.—Gold Medals are given on the day of Graduation to Doctors of Medicine whose Theses are deemed worthy of that honour.

1. *The Beaney Prize for Anatomy, Surgery, and Clinical Surgery*, of the value of £37, 10s. (No. VIII. p. 459).

2. *The Neil Arnot Prize in Natural Philosophy*, of the value of about £42 (No. I. p. 457).

3. *The Wightman Prize in Clinical Medicine*, of Ten Guineas (No. VII. p. 459).

4. *The Cameron Prize* of £98 is awarded yearly to a person, who in the course of five years immediately preceding the date of the award, has made any highly important and valuable addition to Practical Therapeutics (No. IX. p. 459).

5-7. *Three Gunning Victoria Jubilee Prizes*, of the value of £50 each. One for Botany, one for Physiology, one for Surgery, and one for Pathology. Competitive Essays to be lodged with the Dean of the Faculty of Medicine on or before 30th April (No. XI. p. 460).

8. *The Anderson Henry Prize in Botany* (No. XXII. p. 461).

9. *Wilson Memorial Prize* (No. III. p. 457).

N.B.—*Scholars, Bursars, or Fellows must apply to the Dean of the Faculty of Medicine, for Certificates to entitle them to draw the instalments due, and to the Factor for payment thereof, within three months after they have become payable, otherwise they will be regarded as having resigned. Any who desire to resign must at once announce this to the Dean and to the Factor.*

V.

GRADUATION IN SCIENCE.

Conveners of Science Degrees Committee.

SECTIONS A and B—PROFESSOR CAMPBELL FRASER, D.C.L., LL.D., Gorton House, Hawthornden, Edinburgh.

SECTIONS C, D, E, and F—PROFESSOR CRUM BROWN, M.D., D.Sc., F.R.S., &c., 8 Belgrave Crescent.

Degrees in Science.

Convener of Committee—Professor CRUM BROWN, M.D., D.Sc.

Programme of Classes.

SUMMER SESSION, 1890.

The Classes will be opened as follows. They will meet daily (Saturdays excepted), unless otherwise stated; and will be closed on Friday, 18th July.

Classes.	Days of Opening and Hours of Lectures.	Professors.	Class Fees.
Physical Laboratory ...	1 May, 10 o'clock	Prof. Tait and Assistant,	£2 2
Sanskrit.....	1 May, 3 ,,	Prof. Eggeling, ...	3 3
Engineering Field-Work (Surveying, Levelling, &c.).....	17 June, 9.30,,	Prof. Armstrong,	3 3
Geology (*Mon.*, *Wed.*, *Fri.*).....	5 May, 4 ,,	Prof. Geikie,.....	3 3
Field Demonstrations on *Saturdays.*			
Botany.....	1 May, 8 ,,	Prof. Bayley Balfour,	4 4[1]
Practical Botany.....	2 May, 9 & 2 ,,		2 2
Field Demonstrations on *Saturdays.*			
Medical Jurisprudence	1 May, 11 ,,	Prof. Sir Douglas Maclagan,	4 4
Public Health Laboratory Work.....	1 May, daily.		6 6
Natural History.....	1 May, 12 o'clock	Prof. Ewart,	4 4
Elementary Pract. Zool.	2 May, 11 & 2,,		2 2[2]
Advanced Do.	1 May, 1 ,,		3 3[2]
Chemistry (Organic), Advanced Class—(*Tues.*, *Wed.*, & *Thur.*)	1 May, 1 ,,	Prof. Crum Brown,	2 2
Do., Practical.....	1 May, 11.15 ,,		3 3
Practical Physiology, including Histology	1 May, 3 ,,	Prof. Rutherford,	3 3
Comparative Embryology.....	5 May,	Lecturer. Mr George Brook,	2 2[3]

[1] Besides Garden Fee of 5s. [2] Besides charge of 10s. for Laboratory Expenses.
[3] Five Shillings University Entrance Fee for Non-Matriculated Students.

TUTORIAL CLASSES.

These Classes begin on Thursday, 1st May, and close on Friday, 18th July.

Classes.	Hours.	Professors' Assistants.	Class Fees.
Junior Mathematics	11-12	R. E. Allardice, M.A.	£2 2
Senior Mathematics	12-1		
Advanced Mathematics.	10-11		
Natural Philosophy.....	11-12	William Peddie, D.Sc.	2 2
Analytical Dynamics	9-10		

MATHEMATICS.—In the Junior Class of Mathematics the Lectures will be confined to the subjects necessary for the Junior Winter Course, namely, Plane Geometry, and the simpler portions of the Elements of Algebra. The Lectures in the Senior Class, being designed for those who have already attended the Junior Winter Course, or who wish to revise the work of the Senior Winter Course, will embrace Trigonometry, Algebra, and Conic Sections. These Classes afford to Students an opportunity of preparing either for the M.A. Pass or 1st B.Sc. Examination in Mathematics. In the Advanced Class of Mathematics, which has been instituted for the benefit of those preparing to join the Advanced Winter Course, Lectures will be given on Determinants, Theory of Equations, Co-ordinate Geometry, and the Elements of the Differential and Integral Calculus.

NATURAL PHILOSOPHY.—The Course of Lectures on Natural Philosophy will include a treatment of the laws of Heat, Light, Electricity, &c., and of the Elementary Principles of Dynamics. It will be specially adapted to the wants of Students preparing for the 1st B.Sc. or Departmental M.A. Examination in Physics, and for the Natural Philosophy and Mechanics Preliminary Examinations in Medicine and Science. The Advanced Course is intended for Students who are preparing for the Advanced Winter Course, or for the 2nd Science Examinations.

WINTER SESSION, 1890-91.

The classes will be opened as follows, and will meet daily (Saturdays excepted), unless otherwise stated.

Classes.	Days of Opening and Hours of Attendance.	Professors.	Class Fees.
First Mathematics....	22 Oct., 12 o'cl.	Prof. Chrystal	£3 3
Second Mathematics..	22 Oct., 10 ,,		3 3
Third Mathematics ...	27 Oct., 9 ,,		3 3
Logic & Psychology...	22 Oct., 1 ,,	Prof. Campbell Fraser	3 3
Metaphysics and Hist. of Philos. (*Mon. and Thurs.*)	3 Nov., 3 ,,		2 2
Moral Philosophy.....	22 Oct., 12 ,,	Prof. Calderwood	3 3
Do. Advanced.... (*Tues. & Fri.*)....	4 Nov., 3 ,,		2 2
Natural Philosophy...	22 Oct., 11 ,,	Prof. Tait.....	3 3
Do. (Advanced Class)	3 Nov., 10 ,,		3 3
Physical Laboratory..	10 Nov., 10 ,,		2 2
Practical Astronomy .	28 Oct., 11 ,,	Prof. Copeland..	3 3
Agric. & Rural Econ.[1]	22 Oct., 4 ,,	Prof. Wallace ...	4 4
Sanskrit and Comparative Philology—		Prof. Eggeling	
(Junior Class).....	3 Nov., 3 ,,		4 4
(Senior Class).....	3 Nov., 4 ,,		4 4
Engineering	4 Nov., 9 ,,	Prof. Armstrong	4 4
Do., Short Additional Course...	12 Jan., 5 ,,		1 1[2,3]
Geometrical & Mechanical Drawing	5 Nov., 10-2 ,,		3 3
Geology & Mineralogy (*Mon., Wed., & Fri.*)	22 Oct., 4 ,,	Prof. Geikie....	4 4
Practical Class (*daily*)	24 Oct., 3-4 ,,		2 2
Economics as applied to Agriculture (*Mon., Wed., & Fri. till Christmas*)	7 Nov., 3 ,,	Prof. Nicholson	1 1
Chemistry	14 Oct., 10 ,,	Prof. Crum Brown	4 4
Practical Chemistry...	1 Dec., 11 & 2 ,,		3 3
Institutes of Medicine	14 Oct., 11 ,,	Prof. Rutherford.	4 4
Practical Physiology..	15 Oct., 9 ,,		3 3

[1] Steven Lectureship free to past and present Students of Agriculture. Details not yet fixed.

[2] Five Shillings University Entrance Fee for non-matriculated Students.

[3] No fee for Students of the regular Class of Engineering.

WINTER SESSION, 1890-91—*continued.*

Classes.	Days of Opening and Hours of Attendance.	Professors.	Class Fees.
Natural History [1]	14 Oct., 12 o'cl.		£4 4
Elementary Practical Zoology	14 Oct., 1 ,,	Prof. Ewart	2 2 [2]
Advanced Practical Zoology	14 Oct., 1 ,,		3 3 [2]
Med. Jurisprudence [1] [3]		Prof. Sir Douglas Maclagan	4 4
Public Health Laboratory Work	1 Oct.		10 10
Sanitary Engineering and Drawing	12 Nov., 10 ,,	Prof. Armstrong	3 3
Botany [1]	6 Jan. 12 ,,	Prof. B. Balfour.	4 4
Prac. Bot. Element. [1]	8 Jan.		2 2
Do. do. Advanced [1]	22 Oct.		3 3
		Lecturers.	
Forestry	22 Oct., 9 o'cl.	W. Somerville, B.Sc. D.Œcon	3 3 [4]
Compar. Embryology	14 Oct., 3 ,,	Mr George Brook	2 2 [4]
Philos. of Nat. Hist.	Nov. ,,	G. J. Romanes, M.A., LL.D.	

The Fee for a Second Course of any of the Lectures in the Faculty of Medicine is £3, 3s. ; any subsequent course is free. If a Perpetual Ticket is taken out at the beginning of the First Course, the Fee is £6, 6s.

The following means are afforded for Practical Instruction:—

I. LABORATORIES, &c.

THE PHYSICAL LABORATORY, established with the view of affording ing Students a practical knowledge of the construction and use of physical apparatus, and the mode of conducting experimental inquiries, is open daily from 10 to 3, under the superintendence of Professor Tait.

GEOLOGICAL AND PETROLOGICAL LABORATORY, for practical instruction in the study of Minerals, Rocks, and Fossils, and the methods of plotting and drawing geological maps and sections, is open daily from 3 to 4, under the superintendence of Professor Geikie.

[1] Three months' course.
[2] Besides charge of 10s. for Laboratory Expenses.
[3] Lectures given in Summer Session.
[4] Five shillings University entrance fee for non-matriculated Students.

ENGINEERING DRAWING CLASS ROOM, open daily during the Winter Session, from 10 A.M. to 2 P.M., for practical instruction in drawing and drawing office routine.

THE ENGINEERING (FULTON) LABORATORY, open on fixed days during the Winter Session, for the practical instruction of Students in the processes employed by the Engineer in the Experimental Determination of the Physical and Economical Constants of Materials, Machines, and Prime Movers, and in the Practical Applications of Electricity.

PRACTICAL INSTRUCTION IN OFFICE AND FIELD-WORK, daily, in connection with the Summer Course of Lectures on Surveying, Levelling, &c., from 11 A.M. to 4 P.M. each day.

The AGRICULTURE DEPARTMENT in the Museum of Science and Art, is open daily to Students attending the Agriculture Class. Excursions to farms are made on Saturdays by Members of the Agriculture Class, and demonstrations are given from time to time in the Agriculture Laboratory.

The ROYAL OBSERVATORY is open to Students of Practical Astronomy on two evenings of the week, from 8 P.M.

ROYAL BOTANIC GARDEN and BOTANICAL MUSEUM AND LABORATORY.—These, as well as the Herbarium, with which is incorporated the Collection of dried plants belonging to the University, are used by University Students for the practical study of plants and for botanical research, and are open daily, under the superintendence of the Professor, assisted by J. M. Macfarlane, D.Sc., and others.

PHYSIOLOGICAL LABORATORY, for the prosecution of Physiological Research, and for the study of Practical Physiology, open daily, under the superintendence of the Professor and John Berry Haycraft, M.D., D.Sc., assisted by E. W. Carlier, M.B., B.Sc.

The new CHEMICAL LABORATORIES (distinct from the Practical Chemistry Room), completed in 1885, contain accommodation for forty Students. The Laboratories are fitted with all necessary apparatus for chemical analysis and research, open daily, under the superintendence of the Professor, assisted by Dr Gibson.

NATURAL HISTORY LABORATORIES, for research and for study of the structure and development of Invertebrate and Vertebrate forms, open daily, under the superintendence of the Professor, assisted by George Carrington Purvis, M.D., C.M., B.Sc., and others.

PUBLIC HEALTH LABORATORY, for Hygienic investigation, comprises three departments, viz.: a Chemical, a Bacteriological, and a Meteorological Department, open daily, under the superintendence of the Professor, assisted by Charles Hunter Stewart, M.B., C.M., B.Sc , and F. Maitland Gibson, B.Sc. Opens 1st October 1890.

FEES FOR LABORATORY WORK.—In the Chemistry, Public Health, and Natural History Laboratories, the fees are £10, 10s. for the Winter Session, and £6, 6s. for the Summer Session.

II. MUSEUMS.

The University contains the following Museums belonging partly to the Professors and partly to the University:—

The NATURAL PHILOSOPHY MUSEUM contains a large and very valuable collection of physical apparatus, chiefly of modern construction.

MUSEUM OF MUSIC AND MUSICAL INSTRUMENTS.—A very interesting and valuable collection of a historical character.

GEOLOGICAL MUSEUM.—This collection is for class purposes. It exhibits the characters of minerals and rocks, and the typical fossils of the different geological systems.

PHYSIOLOGICAL MUSEUM contains a large collection of Physiological Instruments, including Microscopes and Microscopical Appliances, Physiological Models, Diagrams, and Preparations, partly belonging to the University and partly to the Professor.

CHEMISTRY MUSEUM.—Sir Lyon Playfair, on his resignation of the Chair of Chemistry, presented to the University the collection of Chemical Substances which he used in illustrating his lectures. This collection has been from time to time increased by presents from chemical manufacturers and others, and also by the addition of substances prepared in the University Laboratory.

NATURAL HISTORY MUSEUM.—This Museum, consisting largely of valuable collections transferred by the University to Government, and now preserved in the new Museum of Science and Art, is available for the educational purposes of the University, and is accessible to Students attending the classes of Natural History and Geology.

A ZOOLOGICAL MUSEUM is now being formed in the University. Graduates, Students, and others interested in the Natural History Department will greatly aid in this important undertaking by presenting specimens.

MATRICULATION FEES.

For the Academical Year, 1st October to 1st October, .	£1	0	0
For the Summer Session only, 1st May to 1st October, .	0	10	0
University entrance fee in lieu of Matriculation for each of certain additional Courses (see Class Lists), . .	0	5	0

Regulations as to Degrees.

Two Degrees in Science are conferred by the University of Edinburgh :—that of Bachelor of Science (B.Sc.), which is conferred in the Departments of Physical and Natural Science (Section C), in Engineering (Section D), in Public Health (Section E), and in Agriculture (Section F); and that of Doctor of Science (D.Sc.), which is conferred in the Departments of Mental Science (Section A), and Philology (Section B), and in the above-mentioned Sections C, D, and E.

The Degrees in Science are conferred at the Graduation Ceremonials in April and August.

A.—DOCTORATE IN MENTAL SCIENCE.

The Degree of Doctor of Science is open to Candidates highly prepared in the Mental Sciences.

1. The Candidate must be a Graduate, by examination, of a British or a recognised Indian or Colonial University.

2. He must be matriculated in this University for the year in which he appears for Examination or Graduation.

3. He must have attended for at least one academic year in this University, and during that year he must have taken at least two classes on the subjects embraced in the Examination.

4. The Candidate must, in evidence of literary and philosophical culture, send to the Dean of the Faculty of Arts, *at least one month* before proceeding to Examination, a Thesis giving evidence of original research, on a subject in Mental Science approved, *six months before the examination*, by the Science Degrees Committee. Mere compilations will not be accepted. The Candidate can be admitted to examination only after this Thesis has been found satisfactory by the Examiners.

5. The Candidate may then proceed to the Examination, which shall include Logic and Metaphysics, Moral Philosophy, and the History of Philosophy, both Metaphysical and Moral; and the Examination shall (as far as convenient) be combined with the Examination for Honours in Philosophy of the year in which the Candidate desires to pass, and including the books and subjects embraced in that Examination. [Candidates may be tested both orally and by writing.]

6. Those who have taken the Degree of Master of Arts in this University with First-Class Honours in the Department of Mental Philosophy, may obtain the Degree of Doctor in Mental Science when a period of *not less than five years* shall have elapsed after they have obtained such Honours, on submitting a sufficient Thesis, on a subject approved by the Science Degrees Committee, and on giving such other evidence of increased proficiency in the Mental Sciences, by published writings or otherwise, as may be satisfactory to the Senatus.

7. The Fee for the Degree of Doctor in Mental Science is £7, 7s.[1] The Fee must be paid at the *Matriculation Office* at least ten days before the Examination (or in the case of Candidates admitted under Rule 6, at least ten days before Graduation), when the Diploma and Certificates of the Candidate must be shown to the Dean of the Faculty of Arts. In the event of the Candidate not passing, the fee is not returned, but he may appear at *one* subsequent Examination without paying an extra fee, and at any future Examination on paying one-half of the fee. When Candidates cannot attend personally to pay the fees, they should transmit them to the *Clerk of the University*, by crossed *Post Office* or *Postal Orders*, or by *Bank Drafts only*, and not by cheques on private accounts.

B.—DOCTORATE IN PHILOLOGY.

The Degree of Doctor of Science is open to Candidates highly proficient in Philology.

1. The Candidate must be a Graduate, by examination, of a British or recognised Indian or Colonial University.

2. He must be matriculated in this University for the year in which he appears for Examination or Graduation.

3. He must have attended for at least one academic year at this University, and during that year he must have taken at least two classes on the subjects embraced in the Examination.

4. The Candidate must send to the Dean of the Faculty of Arts, *at least one month* before proceeding to Examination, a Thesis, giving evidence of original research, on some subject in Philology or Archæology, approved *six months before the examination* by the Science Degrees Committee. Mere compilations will not be accepted. The Candidate can be admitted to examination only after this Thesis has been found satisfactory by the Examiners.

5. The Candidate may then offer himself for Examination in any one of the following branches :—

1. *Latin and Greek Languages.* Candidates for the Degree of Doctor of Science in Classical Philology will be tested in respect of their general Scholarship by translation from Latin and Greek Authors, and by composition in Latin and Greek Prose. They will further be required to profess a special knowledge of some Department or Epoch of Classical Literature, or of some three or four of the more difficult and important Classical Writers.

2. *Semitic Languages.*

The following are the subjects of Examination for the Degree in this Department :—

[1] Every candidate, unless a member of the General Council, is required before graduation to pay the Fee for Registration of £1, now made compulsory by Act of Parliament.

(*a.*) Hebrew.—The Books of Samuel, Kings, Psalms, Micah, and Zechariah to be known critically. Hebrew composition.

(*b.*) Syriac.—The Selections from the Chronicle of Bar-Hebraeus and from Ephraem's Hymns in Roediger's Chrestomathia Syriaca. The First Gospel and the Book of Acts (Peshîṭṭâ Version). The Fourth Gospel (Philoxenian Version). Translation into Syriac.

(*c.*) Arabic.—The Ḳor'ân, Sûras i.-vi., xi.-xiv., xxvii., xxviii., xxxi., and lxxviii.-lxxx., with Sale's Preliminary Discourse. Translation into Arabic.

3. *Sanskrit Language and Comparative Philology.*

(*a.*) Sanskrit Language and Literature. Translation of passages from standard Sanskrit Authors into English, and from English into Sanskrit.

(*b.*) Science of Language, and Comparative Philology of the Indo-European Languages. Acquaintance with the principles of Comparative Linguistic Research, as laid down in the Comparative Grammar of Bopp, Schleicher's "Compendium," and Müller's and Whitney's "Lectures." Candidates must also show some degree of familiarity with Curtius' "Grundzüge;" Peile's "Introduction;" and Delbrück's "Introduction to the Study of Language."

[The Examinations will be held annually at the close of the Winter Session. Candidates may be tested both orally and by writing.]

6. Those who have taken the degree of Master of Arts in this University, with First-Class Honours in the Department of Classical Literature, may obtain the Degree of Doctor of Science in Philology, when a period of *not less than five years* shall have elapsed after they have obtained such Honours, after submitting a sufficient Thesis on a subject approved by the Science Degrees Committee, and on giving such other evidence of increased proficiency in Philological Research, by published writings or otherwise, as may be satisfactory to the Senatus.

7. The Fee for the Degree of Doctor of Science in Philology is £7, 7s.[1] The Fee must be paid at the *Matriculation Office* at least ten days before the date of Examination (or in the case of Candidates admitted under Rule 6, at least ten days before Graduation), when the Diploma and Certificates must be shown to the Dean of the Faculty of Arts. In the event of the Candidate not passing, the fee is not returned, but he may appear at *one* subsequent Examination without paying an extra fee, and at any future Examination on paying one-half of the fee.

Friday, 10th April 1891, at 9 o'clock, is fixed for the commencement of the Examinations of Candidates for the Degree

[1] Every Candidate, unless a member of the General Council, is required before graduation to pay the fee of £1 for Registration, now made compulsory by Act of Parliament.

of Doctor in Mental Science, and of Doctor in Philology,—either in Latin and Greek, or in Sanskrit and Comparative Philology. The Examination in Semitic Philology will be held on Wednesday, 25th March 1891, and following days.

Candidates must present their Theses to the *Dean of the Faculty of Arts* at least one month before the date of the Examination. They must also enter their names and addresses and pay the fees at the "*Matriculation Office, University, Edinburgh.*" When Candidates cannot attend personally to pay the fees, they should transmit them to the *Clerk of the University*, by crossed *Post Office* or *Postal Orders*, or by *Bank Drafts only*, and not by cheques on private accounts.

A. CAMPBELL FRASER, D.C.L., LL.D., *Convener.*

C.—DEGREES OF BACHELOR AND DOCTOR OF SCIENCE, IN THE DEPARTMENT OF PHYSICAL AND NATURAL SCIENCE.

QUALIFICATIONS REQUIRED OF CANDIDATES.

1. Candidates for Degrees in Physical and Natural Science must, unless exempted, pass a Preliminary Examination in English, Latin, Arithmetic, the Elements of Mathematics, and the Elements of Mechanics; and in at least two of the following subjects:—Greek, French, German, Higher Mathematics, Natural Philosophy, Logic, and Moral Philosophy. This Preliminary Examination is the same as for Degrees in Medicine (see pp. 363-365).

EXEMPTIONS FROM THE PRELIMINARY EXAMINATION.

(*a.*) Bachelors or Masters of Arts, by Examination, of British or recognised Indian or Colonial Universities.

(*b.*) Bachelors or Doctors of Medicine of British or recognised Indian or Colonial Universities.

(*c.*) Holders of two Departmental Certificates in the Faculty of Arts of this University.

(*d.*) Candidates who have passed in this University the Entrance Examination for Curriculum of Three Sessions for Degrees in Arts in Latin, Greek, and Mathematics, are exempted from the Preliminary Examination in Latin, Arithmetic,

and Elements of Mathematics, and are held to have passed in Greek and Higher Mathematics as optional subjects.

(*e.*) Matriculated Students of the University of London.

(*f.*) Students who have been admitted by Examination to the Royal Indian Engineering College, Cooper's Hill, and who have obtained 50 per cent. of the marks in Latin or in Greek in the Competitive Examination for entrance to that College. Should such Students not bring evidence of having obtained 50 per cent. in either of these subjects, they will be required to pass the Preliminary Examination in Latin.

(*g.*) Holders of Certificates of having passed the Leaving Examinations of the Universities of Oxford and Cambridge when certified as equivalent to a pass in Responsions at Oxford and the First Examination at Cambridge.

2. Candidates must also produce evidence of attendance on qualifying Classes embracing all the subjects included in the Science Examination which they purpose to undergo.

3. The attendance on Science Classes for the Degree of Bachelor of Science must extend over three Academic years, one of which must be passed at the University of Edinburgh, the other two years either at this University, or at Universities or Institutions [1] recognised by and approved by this University; Classes of Chemistry, of Practical Chemistry, of Botany, and of Zoology, which are recognised for the First Professional Examination for Degrees in Medicine, are also recognised for the First Bachelor of Science Examination.

4. Each Academic year must be constituted by attendance on Science Classes during at least two full courses during one winter session, or one such course and two full courses during a summer session. Work in a scientific laboratory extending over a period of not less than five months will be reckoned equivalent to a full winter course of lectures, and work in a scientific laboratory extending over a period of three months will be reckoned equivalent to a full summer course of lectures.

5. Every Candidate for a Degree in Science must produce his Matriculation Ticket for the year in which he appears for Examination or Graduation.

6. Candidates for Graduation who have previously passed the Examinations are required to intimate to the Clerk to the Senatus their intention to Graduate, and pay the fee at least

[1] Only Institutions possessing the necessary staff and appliances for Theoretical and Practical Instruction in Science will be recognised by the University.

A list of Universities and Institutions at present recognised in terms of this regulation is given at page 478.

ten days before the date of Graduation. Those whose Examinations are not then completed are required to give such intimation at the earliest possible date, and at latest one clear day before the day of Graduation.

UNIVERSITIES and INSTITUTIONS at present recognised in Terms of Regulation I. 3.

The Universities of St Andrews, Glasgow, Aberdeen, Oxford, Cambridge, Dublin, and Victoria University, Manchester.

The Glasgow and West of Scotland Technical College; University College, Dundee; University College, London; King's College, London; The Schools of Science, South Kensington; The Owens College, Manchester; The Mason College, Birmingham; The College of Science, Newcastle-on-Tyne; The Yorkshire College of Science, Leeds; University College, Bristol; University College, Liverpool; The Firth College, Sheffield; University College, Nottingham; The University College of North Wales, Bangor; University College of Wales, Aberystwith; The University College of South Wales and Monmouthshire; The Engineering College, Cooper's Hill.

The Queen's College, Belfast; The Queen's College, Cork; The Queen's College, Galway; The College of Science, Stephen's Green, Dublin; The School of Mines, Dublin.

The Presidency Colleges in Calcutta, Madras, and Bombay. The Thomasson Engineering College, and The Engineering College, Poona.

M'Gill University, Montreal; The University College of Toronto; Queen's University, Kingston, Ontario; The University of Sydney; The University of Melbourne; and The University of Adelaide; Wellington College; The University of Otago; Dalhousie College, Halifax, Nova Scotia; Stellenbosch College, South Africa.

The University of Harvard; The University of Yale; The Johns Hopkins University.

The Universities, and Polytechnic Schools supported and regulated or recognised by the governments of the respective Countries of Europe.

EXAMINATIONS.

For the Degree of Bachelor of Science, there are two Examinations, conducted by written questions, as well as orally and practically.

(*a.*) FIRST BACHELOR OF SCIENCE EXAMINATION.

1. The First Examination for B.Sc. is as to the general knowledge of the Candidate on the following subjects, viz. :—

MATHEMATICS.	ZOOLOGY, including COMPARATIVE ANATOMY.
NATURAL PHILOSOPHY.	BOTANY.
CHEMISTRY.	

2. The Examinations in Mathematics and Natural Philosophy take place on the days announced for these subjects in the *Regulations for Graduation in Arts.*

3. The Examinations in Chemistry, Zoology, and Botany, take place at the same time as the examinations on these subjects announced in the *Regulations for Graduation in Medicine.*

4. Candidates may appear for this Examination at the first period of Examination subsequent to their attendance on the necessary classes. It may be taken at one period, or at separate periods: Mathematics and Physics must be taken together; Chemistry, Zoology, and Botany may be taken together or in the following alternative subdivisions, namely—(*a*) Botany and Natural History, (*b*) Chemistry (including Practical Chemistry), (*c*) Botany and Chemistry (including Practical Chemistry), or (*d*) Natural History and Chemistry (including Practical Chemistry), at the first period of examination after they have completed attendance on the relative classes; and may proceed to examination in the remaining subject or subjects at a subsequent period of examination.

5. Masters of Arts who have taken honours in the Natural Sciences after passing the Examinations for M.A. in this University are exempted from the First Bachelor of Science Examination.

6. Holders of departmental certificates in the Department of Mathematics in this University are exempted from Examination in Mathematics and Natural Philosophy.

7. Candidates who have passed the First Professional Examination for Degrees in Medicine in this University are exempted from Examination in Chemistry, Zoology, and Botany.

(*b.*) SECOND BACHELOR OF SCIENCE EXAMINATION.

1. The Second B.Sc. Examination is divided into the following groups, one of which must be professed by the candidate:—

(*a.*) THE MATHEMATICAL SCIENCES, .	Higher Mathematics, Natural Philosophy.
(*b.*) THE PHYSICAL EXPERIMENTAL SCIENCES, ...	Experimental Physics, Chemistry.

(*c.*) THE NATURAL SCIENCES, . . { Zoology, Botany, Physiology, Geology.

2. The Examinations in the first two of these departments will take place at the same time as the Examination for the Degree of M.A., with Honours, and in the third, at the same time as the Examination for the First M.B. Professional Examination.

3. Candidates may proceed to the Second B.Sc. Examination at the next periodical Examination after passing the First.

4. Candidates who have passed the First B.Sc. Examination, and have taken Honours in the Department of Mathematics for the Degree of M.A. in this University, are exempted from the Second B.Sc. Examination in the Department of the Mathematical Sciences.

5. A Candidate who has passed the First and Second B.Sc. Examinations, and otherwise complied with the Regulations for Graduation, will be recommended to the Senatus for that Degree, which will be conferred at one of the usual times appointed for giving Degrees, on the Candidate giving at least one day's notice of his intention to graduate.

(*c.*) DOCTOR OF SCIENCE EXAMINATION.

1. Candidates may present themselves for the D.Sc. Examination twelve months after passing the Second B.Sc. Examination.

2. A Candidate for the Degree of D.Sc. must profess one of the following branches of Science, viz.: Mathematics, Natural Philosophy, Chemistry, Zoology and Comparative Anatomy, Botany, Animal Physiology, Geology, including Palæontology, and in it he will be expected to show a thorough knowledge.

3. He must submit a Thesis containing either an account of original work done by him, or historical or critical research connected with the special subjects of his Examination. The Thesis must be approved before the candidate is allowed to proceed to Examination.

The Thesis must be sent to the Convener of the Science Degrees Committee three months before the date of Examination.

4. The Degree of D.Sc. will not be conferred on any Candidate who has not completed his 21st year.

OUTLINE OF SUBJECTS OF EXAMINATION FOR DEGREES IN SCIENCE.

FIRST BACHELOR OF SCIENCE EXAMINATION.

1. MATHEMATICS.
2. NATURAL PHILOSOPHY.

The Examinations in these subjects are the same as those for the Degree of M.A. in the Department of Mathematics (p. 117).

3. CHEMISTRY.
4. ZOOLOGY AND COMPARATIVE ANATOMY.
5. BOTANY.

The Examinations in these subjects are the same as those for the First Professional Examination in Medicine (see pp. 370, 371).

SECOND BACHELOR OF SCIENCE EXAMINATION.

(*a.*) THE MATHEMATICAL SCIENCES.[1]

The Examination is the same as for the Degree of M.A. with Honours in Mathematics (see p. 121).

(*b.*) THE PHYSICAL EXPERIMENTAL SCIENCES.

1. EXPERIMENTAL PHYSICS.

Candidates will be required to show considerable knowledge of the processes required for the determination of physical constants—such as, for instance, *the Specific Heat, the Specific Inductive Capacity, the Thermal and Electric Conductivity of a substance; the Velocity of Light, or of Sound; the Magnetic Dip, Variation, and Horizontal Intensity, &c., &c.*

2. CHEMISTRY.

Inorganic Chemistry.
Organic Chemistry.
Relation between Chemical and Physical Properties.
Complex Qualitative Analysis, Simple Quantitative Determinations, and the preparation of pure reagents. [*This part of the Examination will be conducted practically.*]

[1] Candidates who have passed the First B.Sc. Examination, and have passed in the Department of Mathematics for the M.A. Degree with Honours, will be held, on paying the fee, to have passed the Second B.Sc. Examination in the Department of the Mathematical Sciences.

(*c.*) THE NATURAL SCIENCES.

I. ZOOLOGY AND COMPARATIVE ANATOMY.

(*a.*) The principal facts of structure, distribution, and development of the following groups: — Amœboidea, Foraminifera, Heliozoa, Radiolaria, Acinetæ, Infusoria, Calcispongia, Fibrospongia, Scyphomedusæ, Hydromedusæ, Hexactiniæ, Octactiniæ, Ctenophora, Crinoidea, Asteroidea, Holothuridea, Echinoidea, Eurypterina, Xiphosura, Acarina, Araneina, Scorpionidea, Peripatidea, Insecta, Myriapoda, Decapoda, Schizopoda, Stomapoda, Amphipoda, Isopoda, Cirripedia, Siphonostoma, Copepoda, Ostracoda, Cladocera, Phyllopoda, Oligochæta, Polychæta, Rotifera, Gephyrœa, Nematoidea, Trematoda, Planariæ, Nemertini, Enteropneusta, Polyzoa, Lamellibranchiata, Pulmonata, Opisthobranchiata, Heteropoda, Prosobranchiata, Polyplacophora, Cephalopoda, Ascidiæ, Appendiculariæ, Leptocardii (Amphioxus), Cyclostomi, Elasmobranchi, Holocephali, Ganoidei, Teleostei, Dipnoi, Urodela, Anura, Ornithoscelida, Chelonia, Ophidia, Lacertilia, Crocodilia, Carinatæ, Ratitæ, Monotremata, Marsupialia, Edentata, Artiodactyla, Perissodactyla, Cetacea, Carnivora, Rodentia, Insectivora, Primates.

(*b.*) *Invertebrate Skeletons.* — Dendrophyllia, Fungia, Gorgonia, Tubipora, Stylaster, Millepora, Campanularia, Sertularia, Flustra, Spatangus, Echinus, Limulus, Scorpio, Nautilus, Spirula, Buccinum, Haliotis, Chiton.

(*c.*) *Vertebrate Skeletons and Skulls for description.* —Salmo, Acanthias, Chimera, Acipenser, Protopterus, Menopoma, Rana, Chelone, Monitor, Alligator, Columba, Gallus, Struthio, Echidna, Ornithorhynchus, Thylacinus (skull only), Phocæna, Felis tigris (skull only), Canis, Sus, Ovis, Equus, Lepus, Erinaceus, Vespertilio, Mycetes (skull only), Macacus (skull only), Troglodytes, Homo.

(*d.*) *Animals for dissection or microscopic examination.*—Alcyonium, Hydra, Cordylophora, Medusa, Aurelia, Beröe, Uraster, Nemertes, Hirudo, Sipunculus, Lumbricus, Aphrodite, Nereis, Musca, Apis (appendages only), Blatta, Scolopendra (appendages only), Julus (appendages only), Scorpio (appendages only), Gammarus (appendages only), Oniscus, Lepas, Apus (appendages only), Cancer, Palæmon, Astacus, Mya, Anodon, Patella, Helix, Limax, Buccinum, Aplysia, Sepia, Ascidia, Amphioxus, Myxine, Gadus, Raia, Rana, Testudo, Lacerta, Columba, Lepus.

(*e.*) A knowledge of the principles of distribution and classification, and a knowledge of the theory of natural selection.

(*f.*) Candidates will also be examined on specimens placed under the Microscope, and will be required to give evidence of a practical knowledge of the more recent methods of research.

II. ANIMAL PHYSIOLOGY.

The whole of Human Physiology, including the minute structure of the various Tissues and Organs.

The Comparative Physiology of the Brain and Spinal Cord in Vertebrates.

The chief Phenomena in the Development of a Bird.

The Candidate will be expected to recognise and describe specimens under the microscope, to perform operations in Physiological Chemistry, and to be acquainted with the principal apparatus used in Experimental Physiology.

Text-Books.—Text-Book of Physiology by Foster, or that by Landois. Embryology, Part I., by Foster and Balfour.

III. BOTANY.

I.—MORPHOLOGY.

1. (*a.*) General:—Doctrine of the Cell; its historical development. Structure of the Cell; its forms and patterns. Protoplasm, the nucleus and nucleolus, plastids. Substances in protoplasm. Forms of cell-formation. Tissues, their kinds and formation. Primary disposition of tissues. Secondary changes in tissues and growth in thickness. Differentiation of the plant into members, the relationships of the members, their development. Branching, its forms. Metamorphosis of members, and the spiral theory. Special features of the flower; its development. Fruits, their forms and development Buds and their modifications; their development. Hairs. Sporangia and their modifications and development. The Seed, its structure and development. Sexual organs, their forms and development.

(*b.*) Special (1)—The principal facts in the life history of the following:—Gomphonema, Fuligo, Protococcus, Nostoc, Bacterium, Vaucheria, Pandorina, Pediastrum, Œdogonium, Coleochœte, Spirogyra, Closterium, Chara, Laminaria, Fucus, Polysiphonia, Nemalion, Dudresnaya, Batrachospermum, Corallina, Protomyces, Entyloma, Mucor, Pythium, Saprolegnia, Podosphaera, Eurotium, Penicillium, Polystigma, Xylaria, Claviceps, Ascobolus, Tuber, Saccharomyces, Collema, Usnea, Parmelia, Puccinia, Endophyllum, Agaricus, Phallus, Anthoceros, Radula, Riccia, Marchantia, Sphagnum, Andreæa, Funaria, Polytrichum, Hymenophyllum, Aspidium, Osmunda, Salvinia, Pilularia, Marsilea, Isöetes, Ophioglossum, Marattia, Equisetum, Lycopodium, Selaginella, Cycas, Pinus, Taxus, Avena, Scilla, Dracæna, Orchis, Ulmus, Digitalis, Helianthus, Vicia, Capsella. Details not of obvious significance from the point of view of Comparative Morphology, will not be required.

(2) The flower and fruit characters of the following Natural Orders:—Coniferæ, Cycadaceæ, Gramineæ, Cyperaceæ, Alismaceæ, Aroideæ,

Palmæ, Juncaceæ, Liliaceæ, Amaryllideæ, Irideæ, Scitamineæ, Orchideæ, Salicineæ, Cupuliferæ, Urticeæ, Euphorbiaceæ, Loranthaceæ, Thymeleaceæ, Polygonaceæ, Chenopodiaceæ, Labiatæ, Acanthaceæ, Scrophularineæ, Solanaceæ, Convolvulaceæ, Boragineæ, Polemoniaceæ, Gentianeæ, Asclepiadeæ, Apocynaceæ, Primulaceæ, Ericaceæ, Vacciniaceæ, Campanulaceæ, Compositæ, Dipsaceæ, Valerianeæ, Rubiaceæ, Caprifoliaceæ, Umbelliferæ, Cacteæ, Cucurbitaceæ, Myrtaceæ, Saxifragaceæ, Rosaceæ, Leguminosæ, Sapindaceæ, Rhamneæ, Ilicineæ, Rutaceæ, Geraniaceæ, Lineæ, Tiliaceæ, Malvaceæ, Hypericineæ, Caryophylleæ, Polygaleæ, Violarieæ, Resedaceæ, Cruciferæ, Papaveraceæ, Nymphæaceæ, Berberideæ, Ranunculaceæ.

Candidates will be expected to be able to draw floral diagrams showing the relations of parts of the flowers in those orders, and to be acquainted with the theoretical explanations of the more important anomalous and divergent types belonging to them. This section, 2, will be especially dealt with in the practical examination, and need not form part of the written examination.

2.—Taxonomy.

Principles of plant classification. The History of its development, and the influence upon it of the dogma of the constancy of species, and of descent. The methods associated with the names of—Cesalpino, Ray, Linnaeus, de Jussieu, de Candolle, Brown, Hofmeister, Hooker.

3.—Distribution.

The elements which determine distribution and dispersion of plants. The leading facts of geographical distribution. Theories of Insular and mountain Floras. The leading facts of palaeophytology, and their bearing on the theory of descent.

4.—Physiology.

Sustentative function of plants. Materials of plant food, their sources. Absorption of food material; its synthesis and distribution in the plant. Parasitism. Saprophytism. Metabolism. Vegetable digestion and assimilation. Respiration. Transpiration. Movement of gases and liquids in plants. Growth. Properties of growing parts. Conditions requisite for and affecting growth. Germination. Correlation of growth. Irritability and Contractility of protoplasm. The adaptation of tissues and members to function. Reproductive function of plants; History of the subject. Agamogenesis and Gamogenesis. Embryogeny. Alternation of generations. Apogamy and Parthenogenesis; Apospory. Self and Cross fertilisation and the theory of fertilisation. Hybridism. Variation. Heredity. Special phenomena in flowering plants.

The following English books are recommended :—De Bary's "Comparative Anatomy of the Vegetative Organs of the Phanerogams and Ferns"; Goebel's "Outlines of Classification and Special Morphology of Plants"; Sachs' "Lectures on the Physiology of Plants"; De Bary's "Comparative Morphology and Biology of Fungi, Mycetoza, and Bacteria"; De Bary's "Lectures on Bacteria"; Sachs' "History of Botany"; Solms' "Introduction to Palaeophytology"; Hooker's "Descriptive and Analytical Botany of Le Maout and Decaisne."

IV. GEOLOGY, INCLUDING PALÆONTOLOGY AND MINERALOGY.

Physical Geography, Meteorology, and Dynamical Geology—The nature and operation of Geological agents: Rain, Rivers, Ice, the Sea, Earthquakes, Volcanoes, Movements of Upheaval and Depression.

Mineralogical and Petrological Geology—Characters of Rock-forming Minerals: Macroscopic and Microscopic Characters, Composition, Origin, and Distribution of Rocks.

Structural Geology—The Structure of Rock-masses, Bedding, Joints, Cleavage, Foliation, Metamorphism, Faults, Unconformability, Denudation.

Stratigraphical Geology—The History of the Geological Formations of the British Islands.

Palæontological Geology—Characters, and distribution in time, of the more important Genera and Orders found fossil in Britain.

DOCTOR OF SCIENCE EXAMINATION.

I. MATHEMATICS.

The candidate will be required to show very high attainments in two at least of the following subjects :—

1. Pure Geometry, including Modern Geometry and Trigonometry.
2. Analytical Geometry.
3. Algebra, including Higher Algebra and the Theory of Numbers.
4. The Differential and Integral Calculus generally.
5. Special departments, such as the Calculus of Variations, Quaternions, &c.

II. NATURAL PHILOSOPHY.

Candidates who select Physics or Applied Mathematics are required to pass a searching examination in one of the following nine subjects or groups of subjects, and to shew more than a mere elementary knowledge of at least two others :—

(A.) APPLIED MATHEMATICS.

1. *Abstract Dynamics*, including *Kinematics*.
2. *Acoustics* and *Theory of Light*.

3. *Conservation of Energy* including the *Dynamical Theory of Heat.*
4. *Electricity*, including the mathematical theories of *Static and Voltaic Electricity*, *Induction*, *Magnetism*, *and Electro-Magnetism.*
5. *Physical Astronomy*, including the *Lunar and Planetary Theories*, the *Figure of the Earth*, *Precession*, *and Nutation.*

(B.) EXPERIMENTAL PHYSICS.

6. *Properties of Matter.*
7. *Sound and Light.*
8. *Heat and Energy* (generally).
9. *Electricity*, *Magnetism*, &c.

(C.) PRACTICAL ASTRONOMY.

1. The Principles and Practice of astronomically finding the geographical co-ordinates of the place of observation on land and at sea.
2. The Principles that guide the actual determination of the chief astronomical constants of *refraction*, *aberration*, *nutation*, *precession*, and *solar-parallax* in fixed observatories.
3. An account of the methods hitherto used for determining the figure and size of the earth.

One group of observations must have been made in the field, or at an observatory, and fully reduced so as to show the value of the derived results, and the precautions that have been taken to free them from instrumental and personal errors. Candidates will also be examined as to the best ways of testing the critical parts of instruments, such as a *pivot*, *screw*, *level*, &c.

III. CHEMISTRY.

The candidate will be required to pass a searching examination in one of the following branches :—

1. The Chemistry and Chemical Technology of Inorganic Bodies, including Metallurgy.
2. Organic Chemistry.

And to shew a thorough practical acquaintance with Chemical Analysis in all its branches, and with the preparation of pure substances.

IV. ZOOLOGY AND COMPARATIVE ANATOMY.

The same subjects as for the Bachelor of Science Examination, along with a competent knowledge of the structure, development, and classification of a special group to be selected by the Candidate and approved by the Examiner.

V. ANIMAL PHYSIOLOGY.

The candidate will be expected to show a thorough knowledge of Human Physiology, together with the Comparative Physiology of the Nervous System. He will also be expected to show an extensive

practical knowledge of Histology, Physiological Chemistry, and Experimental Physiology.

VI. BOTANY.

The Candidate will be required to pass a searching examination in one of the following branches :—

1. Morphology.
2. Physiology.
3. Taxonomy and Distribution,

and to show a competent knowledge of the two others. He will be expected to show a thorough practical knowledge of the branch he selects, and will also be examined practically in the other two.

VII. GEOLOGY, INCLUDING PALÆONTOLOGY AND MINERALOGY.

In addition to a more searching test of the knowledge of the subjects prescribed for the Second Bachelor of Science Examination, Candidates will be required to show some acquaintance with the Geology and Palæontology of foreign countries as well as of the British Islands. It will be necessary that they evince sound practical knowledge. To test their acquirements in this respect, they will be asked to identify and describe specimens of minerals, rocks, and fossils placed before them ; and from a geological map, which will be furnished to them, to write a paper (with sections) on the geology of the district to which the map refers.

D. — DEGREES OF BACHELOR AND DOCTOR OF SCIENCE IN THE DEPARTMENT OF ENGINEERING.

The Degrees of *Bachelor of Science* and *Doctor of Science* are open to Candidates submitting themselves for examination in Engineering according to the subjoined Rules.

1. Candidates must have the qualifications in general education required for Degrees in Natural and Physical Science.

2. There will be two examinations for the Degree of *Bachelor of Science*, and a subsequent examination for the Degree of *Doctor of Science*. The examinations are written, oral, and practical.

3. The first examination is as to the general knowledge of the Candidate on the following subjects, viz. :—

MATHEMATICS.
NATURAL PHILOSOPHY.
CHEMISTRY.

The examination is the same as the examination in these subjects for Degrees in Physical and Natural Science.

4. This examination is called the *First Bachelor of Science Examination in Engineering.*

5. Candidates who have passed the *First Bachelor of Science Examination* (or who have been exempted from it), may proceed to the *Second Bachelor of Science Examination* at the next periodical Examination after passing the First. The Examination will be in the following subjects:—

DYNAMICS.
ENGINEERING.
DRAWING.

6. Candidates, after passing the Second Examination, and otherwise complying with the Regulations for Graduation, will be recommended to the Senatus for the Degree of Bachelor of Science on their giving at least one day's notice of their intention to graduate.

7. Candidates who have received the Degree of B.Sc. in the Department of Engineering, and who desire to proceed to the Degree of *Doctor of Science*, may present themselves for examination after the expiry of twelve months from the date of their passing the Second B.Sc. Examination.

8. The examinations will be conducted by University Examiners, and the special Examiner appointed by the University Court.

9. The Degree of D.Sc. will not be conferred on any Candidate until he has completed his 21st year.

FIRST BACHELOR OF SCIENCE EXAMINATION.

OUTLINE OF SUBJECTS OF EXAMINATION.

(*a.*) MATHEMATICS.

(*b.*) NATURAL PHILOSOPHY.

The Examinations in Mathematics and in Natural Philosophy are the same as for First B.Sc. Examination in Natural and Physical Science. (See p. 481.)

(*c.*) CHEMISTRY—

Same as for First B.Sc. Examination in Natural and Physical Science. (See p. 481.)

SECOND BACHELOR OF SCIENCE EXAMINATION.

(*a.*) DYNAMICS—

The Applications of Mathematics (as far as the Elements of the Differential and Integral Calculus) to

Kinematics.

Statics of Rigid Solids, Elastic and Perfectly Flexible Bodies, and Perfect Fluids.

Attraction.

Kinetics of a Particle, of a Flexible Cord, and of a Rigid Solid. The Simpler Portions of Kinetics of Perfect Fluids.

(*b.*) ENGINEERING—

Field-Work. — Surveying; Levelling; Setting out of Work; Calculation of Quantities.

Properties of Materials.—General Properties, with special knowledge of their Strength, and the Purposes to which they are applied, and some knowledge of their Cost.

Strength and Stability of Structures Designed by Civil Engineers. — Metal and Timber Bridges and Roofs. Arches in Masonry. Walls. Retaining Walls. Embankments. Cuttings. Breakwaters. Aqueducts. Pipes. Canals.

Strength and Form of the Elements of Machines.

Design of Combined Structures.—An elementary knowledge of the Design of Bridges and Roofs, of Reservoirs, Embankments, collecting and distributing Machinery of Waterworks, and of the main features of Railway construction, Harbours, and Drainage.

Design of Machinery.—An elementary knowledge of the construction of the Steam Engine, stationary and locomotive, of Prime Movers driven by Water, of Mill-wright work, and the general arrangement of Workshops and Factories.

Prime Movers.—Theory of Heat Engine. The Hot Air Engine. The Steam Engine. The Gas Engine. Turbines and Water Wheels. *Power Transmission* — Telodynamic, Hydraulic, Electric.

(*c.*) DRAWING—

Candidates must exhibit a good knowledge of Geometrical Drawing, and be able to represent neatly, in the usual manner employed by engineers, Plans and Sections of Buildings and Machinery, and also to make Engineering Sketches with figured dimensions from actual objects.

Candidates who have passed the two examinations, and otherwise complied with the Regulations for Graduation, will be recommended to the Senatus for the Degree on their giving at least one day's notice of their intention to graduate.

DOCTOR OF SCIENCE EXAMINATIONS.

1. Every candidate for this Degree must have been engaged for at least two years under an engineer in actual practice. He will be examined in one, and not more than one, of the sub-divisions in each of the two following groups of subjects :—

I.—Practical Engineering,
- (*a.*) The design of Machinery, with complete Drawings, Specifications and Estimates.
- (*b.*) The preparation of Designs, Specifications, and Estimates for Civil Engineering work.

II.—Applied Science, . .
- (*a.*) Applied Mathematics.
- (*b.*) Technological Chemistry.
- (*c.*) Geology.
- (*d.*) One Branch of Natural Philosophy.
- (*e.*) Telegraphy.

2. The class of machinery, or the particular engineering work on which the student is examined, will be chosen with reference to the character of the work upon which he has been specially engaged.

3. Candidates will be tested as regards their knowledge of the subjects of Group I. by their being required to submit, as their own work, a complete set of drawings, specifications, and estimates for some proposed project or piece of machinery, for the preparation of which a month or five weeks will be allowed.

These drawings, &c., together with the detailed calculations upon which they have been based, will be sent in to the Examiners; and on their being approved, the candidate will be subjected to a searching examination for the purpose of verifying the authenticity of the work submitted, and of ascertaining the sufficiency of the candidate's professional ability.

4. A high degree of proficiency will be required from the candidate.

E.—DEGREES OF BACHELOR AND DOCTOR OF SCIENCE IN THE DEPARTMENT OF PUBLIC HEALTH.

Two Degrees in Science in the Department of Public Health are conferred by the University of Edinburgh, viz., Bachelor of Science (B.Sc.) and Doctor of Science (D.Sc.).

I. BACHELOR OF SCIENCE.

1. Every Candidate for Graduation in Science in the Department of Public Health must be a Graduate in Medicine of a University of the United Kingdom, or of a Colonial, Indian, or Foreign University specially recognised by the University Court.

2. Every Candidate must be matriculated for the year in which he appears for examination or graduation.

3. There are two Examinations for the Degree of Bachelor of Science in the Department of Public Health.

4. Every Candidate who desires to proceed to the first examination for the said Degree must produce evidence—(*a*) that he has taken a Degree in Medicine in the University of Edinburgh, or in a University recognised under section 1 hereof; (*b*) that he has worked for at least six months, or the usual winter session, in a Laboratory where practical instruction is given in the methods of investigating subjects pertaining to Public Health. This course must be attended, after Graduation in Medicine, either in the Public Health Laboratory of the University of Edinburgh, or in a Laboratory in which instruction in Public Health is given, and which has, after due enquiry, been recognised by the University Court.

5. Laboratories are not recognised for the purpose referred to in section 4 (*b*), in which provision is not made for the teaching of Public Health Laboratory work in accordance with the Schedule of Laboratory work issued by the Senatus, as provided in section 11 hereof, nor will they be recognised if such work is not taught by a specially recognised teacher.

6. Candidates shall not be admitted to the Second Examination for the said Degree until one year after taking a Degree in Medicine, nor until an interval of at least three months has elapsed after passing the First Examination.

7. Every Certificate of Laboratory attendance must bear that the Candidate worked during his period of attendance for at least fifteen hours per week.

8. Every Candidate who desires to proceed to the second examination for the said Degree must produce evidence—(*a*) that he has attended in this University at least two courses of instruction on subjects included in the Examinations set forth in section 10 hereof; (*b*) that he has attended a course of lectures in which instruction is given in Public Health.

9. In the event of the General Medical Council of the United Kingdom bringing into effect their resolution requiring that every Candidate for a Registrable Qualification in Public Health shall, after obtaining a Registrable Qualification in Medicine, practically study the duties of Out-door Sanitary work under the Medical Officer of Health of a county or large urban district for a period of not less than six months, —every Candidate who desires to proceed to such Second Examination must, after such resolution comes into force, produce evidence that he has been engaged in such work.

10. The subjects of the Examinations for the Degree of Bachelor of Science in the Department of Public Health shall be as follows:—

(*a*) For the First Examination:—1. Laboratory work. The Examination in this department is conducted practically, and by a Written Examination in which the Candidate shall be required to explain the rationale of the investigations contained in the schedule of Laboratory work referred to below. There is also an Oral Examination. 2. Elements of Experimental Physics. The Examination in this Depart-

ment is conducted by means of written papers, followed by an Oral Examination.

(*b*) For the Second Examination:—1. Medicine in its application to Public Health. 2. Practical Sanitation. 3. Sanitary Law and Vital Statistics. 4. Mensuration and Drawing.

The Examinations in these departments are conducted by means of written papers, and also as far as possible practically; and an Oral Examination in each department is held after the Written Examinations.

11. Detailed Schedules of the subjects of Examination in each department named in section 10 will be issued from time to time by authority of the Senatus.

SCHEDULES OF THE SUBJECTS OF EXAMINATION.

Laboratory Work.

(1.) *Examination of Water.*—Physical Properties, Chemical Properties, Microscopical Appearances, Pollution of Potable Waters.

(2.) *Examination of Air.*—Temperature, Pressure, Humidity; Carbonic Acid, Ozone, Micro-organisms, Organic Matter, Noxious Emanations.

(3). *Examination of Foods.*—Milk, Butter, Butterine, or Oleomargarine. Flour, Bread, Starchy foods, Sugar, Honey, Butcher meat, Fish, Vegetables.

(4.) *Examination of Beverages.*—Tea, Coffee, Cocoa, Alcoholic Beverages, Aërated Waters.

(5.) *Examination of Condiments.*—Salt, Pepper, Mustard, Vinegar, and Preserves; Examination of Lime Juice. Nutritive Value of Dietaries.

(6.) *Sewage.*—Examination of sewage and of effluents after treatment.

(7.) *Soils.*—Temperature, Humidity, Permeability, Chemical Composition, Gases of the Soil, Micro-organisms.

(8.) *Disinfectants and Deodorisers.*—Chemical Examination of the Materials, Determination of their comparative power.

(9.) *Building Materials.*—Chemical and Physical Properties.

(10.) *Clothing.*—Physical Properties of Clothing Materials.

(11.) *Bacteriology.*—Micro-organisms in relation to Epidemic and other Diseases.

Physics.

(1.) *Laws of Motion and Properties of Matter.*—Elasticity, Density, Porosity, Divisibility, Viscosity, &c.

(2.) Elements of Dynamics of Solid and Fluid Bodies.

(3.) Elementary Experimental Facts regarding Energy in the common phenomena of Sound, Light, Heat, Electricity, and Magnetism.

(4.) *Elements of Astronomy.*—Causes of Tides, Eclipses, Aberration, Precession, &c.

Medicine in its application to Public Health.

The General Pathology of Endemic, Epidemic, and other morbid Processes induced by Environment.

The Causes, Clinical History, Diagnosis, Prognosis, and Prevention of Endemic and Epidemic Diseases, as well as of the Epizootics which affect Man; of the Contagious or Infectious Diseases; and of those incidental to particular trades, or otherwise produced by the surroundings of the patient.

Practical Sanitation.

(1.) *Site and Environment of Dwellings.*—Influence of Position, Aspect, and Climate; Meteorological and Geological Conditions; Soil and Drainage.

(2.) *Water Supply.*—Quantity per head; Relative Eligibility of available Sources of Supply; Estimation of yield; Methods of utilising various Sources of Supply; Storage, Subsidence, and Filtration; Distribution—(α) General, (β) Domestic; Causes, Detection, and Treatment of contaminated Supply.

(3.) *Air Supply.*—Quantity and Temperature, with knowledge of use of instruments employed in their Measurement; Causes and Detection of Impurities; Warming and Ventilation; Characteristics and Fitness of various methods in use.

(4.) *Excreta, Refuse, and Sewage.*—Character and Quantity of in (α) Urban, (β) Rural Districts—

A. Collection and Removal from (1) the Dwelling, (2) the Town or Village; Nature, Practical details, and maintenance of the several methods employed.

B. Disposal: (1) Sanitary, (2) Insanitary methods; Precipitation, Filtration, Irrigation, Discharge; Design and details of necessary works.

(5.) *General Structural and Mechanical Details of Sanitary Works.*—Character, Fitness, and Qualities of Materials (Brick, Cement, Earthenware, Iron, Lead); Design, setting out, and laying of Sewers; Plumbing and Iron-work.

(6.) *Infectious and Epidemic Diseases.*—Origin, Modes of Propagation, and Means of Prevention; Epizootics.

(7.) *Disinfectants.*—Selection and application.

(8.) *Effects of Insanitary Conditions.*—Insufficient house accommodation, Vitiation of Air, Impure Water, Bad or insufficient Food.

(9.) *Unhealthy Occupations.*—Means of mitigating or removing their unhealthiness.

10.) *Nuisances.*—Urban, Rural, and Domestic.

(11.) *Hospitals.*—Principles of Design and Construction.

(12.) *Disposal of the Dead.*—Burial, Cremation.

Sanitary Law.[1]

Sanitary Administration. Laws affecting Factories, Workshops, Mines, Common Lodging-houses, Removal of Refuse, Nuisances, Rivers Pollution, Alkali Works, Burial Grounds, Unwholesome Food, Adulteration of Food and Drugs. Sale of Poisons.

Vital Statistics.

Leading facts as regards Population, Birth and Death Rates, Distribution of Diseases.

Mensuration and Drawing.

Computation of Areas and Volume; Scales; Elements of Orthographic and Isometric Projection; Figured or dimensioned sketches; Preparation and interpretation of contoured Maps, Plans, and Working Drawings.

II. DOCTOR OF SCIENCE.

12. Bachelors of Science in the Department of Public Health may, after the lapse of one year, proceed to the Degree of Doctor in the same Department, on producing evidence that they have been engaged in Practical Sanitation since they took the said Degree of Bachelor of Science, and on presenting a Thesis on some subject in the Department of Public Health. Every such Thesis must be certified by the Candidate to have been composed by himself, and must be approved of by the Examiners.

13. Every Candidate for the Degree of Doctor of Science in the Department of Public Health must lodge his Thesis with the Convener of the Science Degrees Committee of Senatus on or before the 30th January in the year in which he intends to graduate.

14. No Thesis will be approved which does not contain either the results of original observations on some subject embraced in the Examination for the said Degree of Bachelor of Science, or else a full digest and critical exposition of the opinions and researches of others on the subject selected by the Candidate, accompanied for the purpose of verification, by precise references to the publications quoted.

F.—THE DEGREE OF BACHELOR OF SCIENCE IN THE DEPARTMENT OF AGRICULTURE.

1. In the Department of Agriculture the Degree of Bachelor of Science is the only Degree conferred.

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[1] A knowledge of the Sanitary Law of any part of the British Dominions will be sufficient.

2. The Rules as to a Preliminary Examination on subjects of General Education are the same as those for Graduation in the Department of Physical and Natural Science.

3. The Rules as to attendance on qualifying Classes for three Sessions are the same as those for Graduation in the Department of Physical and Natural Science; provided always (1.) that instead of one of such three years of attendance, a year may be spent on a Farm or Farms in pursuance of the practical study of Agriculture; (2.) That in the case of any subject in the Department of Agriculture, which is not taught in the University, attendance may be given at an Institution specially recognised by the University Court for purposes connected with Graduation in Science in that Department only;[1] and (3.) That, in the case of Agricultural Chemistry, attendance may be given on a course of Instruction thereon by any teacher of Chemistry who is recognised under the Regulations for Graduation in Medicine.

4. Each Candidate must produce a Certificate of attendance upon a Qualifying Class on each subject of Examination; and should he, instead of one of the three years of attendance on Classes required in Section 3, have spent a year in the practical study of Agriculture, he must produce a Certificate to that effect.

5. There are two Examinations for the Degree of Bachelor of Science in the Department of Agriculture. These Examinations are Written, Oral, and Practical.

6. The first Examination is in :—[2]

(1.) AGRICULTURE, to such an extent as may from time to time be fixed by the Senatus.

(2.) CHEMISTRY, to the extent required for the First Examination for the corresponding Degree in the Department of Physical and Natural Science.

(3.) BIOLOGY (*a*) BOTANY, or (*b*) NATURAL HISTORY, either subject, at the option of each Candidate.

In either case the Examination shall be to the extent required for the First Examination for the corresponding Degree in the Department of Physical and Natural Science.

(4.) GEOLOGY, in so far as bearing on Agricultural Science.

(5.) ECONOMIC SCIENCE, to such extent as may from time to time be fixed by the Senatus.

7. Candidates who have passed the First Examination may present themselves at the end of six months for the Second Examination.

8. The Second Examination is in :—[2]

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[1] The Institutions recognised for this purpose are :—The Royal Agricultural College, Cirencester; The College of Agriculture, Downton; and The Veterinary Colleges of the United Kingdom.

[2] This Examination may be taken at one period or in two divisions at separate periods. Candidates who have begun their Curriculum under the old regulations,

(1.) AGRICULTURE and RURAL ECONOMY.
(2.) CHEMISTRY, as applied to Agriculture.
(3.) VETERINARY HYGIENE, to such extent as may from time to time be fixed by the Senatus.
(4.) ENGINEERING, to such extent as may from time to time be fixed by the Senatus.

9. Candidates who have passed the Second Examination will be recommended to the Senatus for the Degree of Bachelor of Science.

10. The Examinations are conducted by University Examiners appointed by the University Court, and an additional Examiner in Agriculture, to be appointed by the University Court, after communicating with the Council on Education of the Highland and Agricultural Society of Scotland, and considering any recommendation by them.

OUTLINE OF SUBJECTS OF EXAMINATIONS.

FIRST BACHELOR OF SCIENCE EXAMINATION.

1. AGRICULTURE: ITS SCIENTIFIC PRACTICE.

1. *Definition of Agriculture.*—Aid given by the Allied Sciences.

2. *Surface Geology.*—Formation and Classification of Soils—their Physical and Chemical Properties. Importance of Organic Nitrogen. Indications of good or bad Soils—the different Methods of Management.

3. *Drainage.* — Its Practice and Advantages — Irrigation—Wet-Warping — Mixing or Top-Dressing—Claying—Marling—Chalking—Liming—Paring and Burning—Clay-Burning. The Effect on Soils of Cultivation and the Growth of Plants.

4. *Implements and Machines of the Farm.*—The Importance of their proper Construction and Careful Management.

5. *Steam Cultivation.*—Its Advantages and Disadvantages.

6. *The Motive Powers Employed on the Farm.*—1st, Man; 2d, Horse; 3d, The Mechanical Powers (Water, Wind, and Steam)—their Comparative Values and Advantages.

7. *Farm Servants.*—Their Labour and Wages — Day-work and Piece-work. Detailed and total costs of Horse and Hand Labour.

8. *The Importance of Rotations.*—Different Rotations and reasons why they are adopted—Systems of Farming.

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which placed Engineering in the first Examination, and Geology in the second, are allowed to finish their studies under those regulations or comply with the altered regulations if they prefer to do so.

Exemption from examination is given to University students who enter for the Diploma of the Surveyors' Institute, 12 Great George Street, London, on their presenting class certificates of proficiency (6s p. c.) in Agriculture and certain allied Sciences.

9. *Our Farm Crops* (Grain, Root, Forage, and Hay Crops).—Their Selection and Growth—Prevention of Insect Injuries and Diseases.

10. *Identification of Grasses and other Valuable Pasture Plants.*—Character and Habits of those of importance—Detection of Adulterations—Regulations necessary to protect the Farmer in buying Seeds.

11. *The Management of Permanent Pasture.*—Proper Methods of making new Pasture—its After-treatment.

12. *Weeds in Pastures* and Means of Destroying them.

13. *Silage and the System of Ensilage.*—Its Advantages, &c.—Its Suitability and Unsuitability according to Locality.

14. *Manures.*—Farm-yard Manure—its proper Mixing, Storing, and Application—its great advantage as a General Manure. Special Manures and so-called Artificials—their Uses, Abuses, and Adulterations—the proper Times and Methods of their Application. The Value and Use of Liquid Manure and Town Sewage.

15. *Buildings and Fences.*—The proper Construction of Fences—the General Arrangement of Farm-Buildings—the best Flooring and Inside Plans and Dimensions of Byres, Cattle-Sheds, Stables, &c.—Covered Yards—Ventilation—Drainage of Houses and Farm-yards.

2. Chemistry.

3. Botany.

4. Natural History.

The Examinations in Chemistry, Botany, and Natural History are the same as for the First B.Sc. in Natural and Physical Science. (See p. 481.)

5. Geology as bearing on Agriculture.

(1.) *Physical Geography and Dynamical Geology.*—The nature and operation of Geological agents:—Rain, Underground Water, Rivers, Ice, the Sea, Life, Earthquakes, Volcanoes, Movements of Upheaval and Depression.

(2.) *Mineralogical and Petrological Geology.*—Characters of the principal Rock-forming Minerals: Composition, Origin, and Distribution of the more important and commonly occurring Rocks.

(3.) *Structural Geology.*—The Structure of Rock-masses, more especially Bedding, Joints, Faults, and Denudation.

(4.) *Agricultural Geology.*—Nature and Origin of Soils and Subsoils; Draining in connection with Geological Structure; Mineral substances used as Manures.

6. Economic Science as applied to Agriculture.

1. The Food Supply of the United Kingdom.
2. The Wages of Agricultural Labour.
3. The Profits of the Farmer.

4. The Rent of Land and Causes of Variations in Rent.
5. Contracts for the Hire of Land.
6. The Risks of Long Leases.
7. Compensation for Improvements.
8. Fixity of Tenure and its Effects.
9. The Prices of Agricultural Produce.
10. Foreign Competition.
11. Effects of the Appreciation of Gold and the Depreciation of Silver.
12. Effects of various Imperial and Local Taxes on Agriculture.

SECOND BACHELOR OF SCIENCE EXAMINATION.

1. AGRICULTURE AS FOR FIRST B.SC. AND THE FOLLOWING—

(1.) *Live-Stock, embracing Cattle, Pigs, Horses, Sheep*—The Various Breeds of each, and suitability of some to Local Conditions—"The Principles of Breeding." Feeding and Management—Cost of Feeding—Proper Mixtures of Food to Use. Cost of the Production of a Stone of Beef, Mutton, and Pork, showing the Amount of Profit in each Case.

(2.) *Dairying in all its Branches*, including the suitability or otherwise of surrounding Conditions—the proper Classes of Dairy Stock to keep, and their Management—the Treatment of Milk, and its Sale or Manufacture into Cheese, Butter, &c.

(3.) *Feeding Stuffs*—Suitability of the Common Food Substances to the Different Classes of Farm Stock—The Purchase, Storing, and Administration of the same—their Manurial Residues.

2. AGRICULTURAL CHEMISTRY.

1. *Soil.*—Origin—Chemical and Physical Characters—Composition and Improvement of Soil—Functions of Soil.

2. *Plants.*—Constituents of Plants: Organic, Inorganic, and Proximate. Composition of Ash. Changes which take place during Plant Growth. Plant Food and its Sources.

3. *Manures.*—General Principles of Manuring. Composition and Nature of general and special Manures. Valuation and Adulteration of Manures. Valuation of Unexhausted Manure in Soils.

4. *Crops.*—Rotation. Cereal Crops. Leguminous Crops. Forage Crops. Root and Tuber Crops. Crop Residues.

5. *Live Stock.* Animal Nutrition. Constituents of Animals. Foods. Destination of Food. Digestibility and Comparative Nutritive Value of Foods. Water. Animals as Producers of Food and Manure.

6. *The Dairy.*—Constituents and Properties of Milk, Cream, Butter, Cheese, and minor products. Adulterations and Modes of Detection.

3. Veterinary Hygiene.

1. The Comparative Osteology (rudimentary) of the Horse, Ox, and Sheep.

2. The Physiology of Dentition in Horse, Ox, Sheep, and Pig, more especially as indicative of the Age of the Animal.

3. The Physiology of Gestation; the Diseases incidental to the pregnant state, and also those consequent to the act of parturition.

4. Description of the Digestive Organs of the Horse, Ox, and Sheep (separately), also their Physiology, and most ordinary Diseases.

5. Contagious and other Diseases of Farm Stock. Prevention and Treatment of Diseases.

4. Engineering.

1. *Engineering Field Work.*—Surveying, with special reference to Estate and Parish Surveying, Levelling, Plotting of Surveys and Sections, Calculation of Quantities.

2. *Mechanics.*—(*a*) Principles of Statics; couples; moments of forces; parallel and inclined forces; centre of gravity; moments of inertia; friction. (*b*) Principles of Kinematics and Kinetics; Newton's laws of motion; Conservation and transformation of energy.

3. *Strength and Properties of Structural Materials*, including their fitness and adaptability, together with some knowledge of their cost.

4. *Strength and Stability of Structures.*—General knowledge of the design, construction, and maintenance of Roads, Roofs, Bridges, Embankments, Retaining Walls, Aqueducts, and General Buildings.

5. *Hydraulics.*—The laws governing the flow of water in open and closed channels, and its discharge through orifices; Systems of Drainage and Irrigation; Pumps, &c.

6. *Mechanism and Machinery.*—General Principles and means of transmission, conversion, and modification of motion; general millwright work with special reference to the machines ordinarily employed for agricultural purposes.

7. *Prime Movers.*—A knowledge of the sources and modes of estimating power; The Steam Engine; Pneumatic Machines; Hydraulic Motors, Water-wheels, Turbines, &c.

FEES.[1]

The following are the fees payable for Degrees in Science:—[2]

[1] When names are not entered nor fees paid on or before the stated dates, a late entry fee of ten shillings must be paid before the Candidate can be admitted to examination. A Candidate is not held to be entered for the Examination until his Name is entered, all the necessary Certificates, &c., lodged, and the Fee paid.

Every Candidate, unless a member of the General Council, is required before graduation to pay the Fee for Registration of £1, now made compulsory by Act of Parliament.

[2] Candidates should apply for their Diplomas at the Matriculation Office, immediately after obtaining the Degree. There is no additional charge for the Diploma. Any Graduate who cannot apply personally, is required to give written authority to some person to receive and give a receipt for it.

1. Departments of Physical and Natural Science and Engineering—

For the preliminary examination, or for registration of qualification, ...	£1	1	0
For the First Bachelor of Science examination,	2	2	0
For the Second Bachelor of Science examination,	2	2	0
For the Doctor of Science examination, . .	5	5	0
	£10	10	0

2. Department of Public Health—

For the First Examination for the Degree of Bachelor, ...	£5	5	0
For the Second do. do.,	5	5	0
For the Degree of Doctor, ...	5	5	0
	£15	15	0

3. Department of Agriculture—

For the Preliminary Examination, or for Registration of any exempting Qualification, .	£1	1	0
For the First Bachelor of Science Examination	2	2	0
For the Second do. do.	2	2	0
	£5	5	0

In the event of a Candidate not passing, the fee is not returned, but he may appear at *one* subsequent Examination without paying an extra fee, and at any future Examination on paying one-half of the fee.

Every Candidate for Graduation is required to pay the Fee of £1 for Registration as a Member of the General Council of the University, at least one clear day before the date of Graduation.

All communications relating to the Curricula and Examinations for degrees in the departments of the Mathematical, Physical, and Natural Sciences, Engineering, Public Health, and Agriculture, and to Examinations for Science Fellowships and Scholarships, &c., should be addressed to *The Convener of the Science Degrees Committee*, at the office of the Faculty of Medicine, University New Buildings, where the Schedules for Examinations are issued and the Certificates of Candidates examined.

The Examination Fees are payable at the *Matriculation Office*, University, on Certificate from the Convener of the Science Degrees Committee that the necessary Matriculation Tickets and Class Certificates have been examined. The Matriculation and Registration Fees are also payable at the *Matriculation Office*. When Candidates cannot attend personally to pay the fees, they should transmit them to the Clerk of the University, by crossed *Post Office* or *Postal Orders*, or by *Bank Drafts only*, and not by cheques or private accounts.

DATES OF EXAMINATIONS AND FOR PRESENTING CERTIFICATES AND PAYMENT OF FEES.

Preliminary Examination in General Education. 7th, 8th, 9th, and 10th October 1890; and 3rd, 4th, 5th, and 6th March 1891. Hours at pages 362 and 363.

Names to be given in and Fees paid on or before 1st October 1890, and on or before 23rd February 1891.

MATHEMATICAL, PHYSICAL, AND NATURAL SCIENCES.

First B.Sc. Examination. Mathematics, 14th October 1890, at 2.30 P.M., and 15th October, at 9 A.M.; 6th April 1891, at 3 P.M., and 7th April at 9 A.M.; Natural Philosophy, 16th October 1890, at 1 P.M., and 8th April 1891, at 1 P.M. Names to be given in, certificates shown, and fees paid on or before 6th October and 9th March; Chemistry, 21st July 1890, and 23rd March 1891, at 11 A.M.; Botany, 21st July 1890, and 23rd March 1891, at 2 P.M.; Zoology, 22nd July 1890, and 24th March 1891, at 11 A.M.; Practical Chemistry, 23rd July 1890 and following days, and 25th March 1891 and following days. Names to be given in, certificates shown, and fees paid on or before 7th July and 9th March.

Second B.Sc. Examinations, Mathematical Sciences. Mathematics, 10th April 1891, 9 to 12 A.M. and 1 to 4 P.M.; Natural Philosophy, 11th April 1891, 9 to 12 A.M. and 1 to 4 P.M. **Physical Experimental Sciences** (Physics), 16th October 1890, and 11th April 1891, 1 to 4 P.M.; (Chemistry), 21st July 1890, and 23rd March 1891, at 11 A.M. and 2 P.M. The Practical Examination in the Laboratory will be held shortly after the Written Examination. **Natural Sciences** (Zoology), 22nd July 1890, and 24th March 1891, at 11 A.M.; (Botany), 21st July 1890, and 23rd March 1891, at 2 P.M.; (Physiology), 21st July 1890, and 23rd March 1891, at 11 A.M.; (Geology), 22nd July 1890, and 24th March 1891, at 2 P.M. Names to be given in, certificates shown, and fees paid on or before 7th July and 6th October 1890, and 9th March 1891 respectively.

ENGINEERING.

First B.Sc. Examination. Chemistry, 21st July 1890, and 23rd March 1891, at 11 A.M. Practical Chemistry, 23rd July 1890, and 25th March 1891, and following days. Mathematics, 14th October 1890, at 2.30 P.M., and 15th October, at 9 A.M., 6th April 1891, at 3 P.M., and 7th April, at 9 A.M.; and in Natural Philosophy, on 16th October 1890, and 8th April 1891, at 1 P.M. each day. Names to be given in, certificates shown, and fees paid on or before 7th July and 6th October 1890, and on or before 9th March 1891.

Second B.Sc. Examination. Engineering and Drawing, 5th 6th, and 7th November 1890, at 11 A.M. and 2 P.M. each day; and 6th, 7th, and 8th April 1891, at 11 A.M. and 2 P.M. each day. Dynamics, 4th November 1890, and 11th April 1891, at 1 P.M. each day. Names to be given in, certificates shown, and fees paid on or before 24th October 1890, and 9th March 1891 respectively.

Examinations for D.Sc. in Departments I. and II. will be held in April and October. Candidates must present their Theses and pay fees at least three months before the date of the Examination.

PUBLIC HEALTH.

First B.Sc. Examination, 21st July 1890 and 23rd March 1891; Laboratory work at 11 A.M., and Physics, at 2 P.M. each day; Practical Work in the Laboratory, 23rd July 1890, and three succeeding days, and 24th March 1891, and three succeeding days. Names to be given in, certificates shown, and fees paid on or before 7th July and 9th March respectively.

Second B.Sc. Examination, 7th, 8th, 9th, and 10th July 1890. Medicine, 7th July, 11 to 1. Sanitary Law and Vital Statistics, 7th July, 2 to 4. Practical Sanitation, 8th July 11 to 1 and 2 to 4. Oral Examination, 9th and 10th July. Names to be given in, certificates shown, and fees paid on or before 27th June.

D.Sc. Examination Fees should be paid when the Theses are lodged.

Candidates are required to lodge with the Convener of the Science Degrees Committee at the Office of the Faculty of Medicine, University New Buildings, proof of their being eligible, and to pay the fees to the Clerk of the University.

AGRICULTURE.

First B.Sc. Examination. Agriculture, 17th October 1890, 9 to 11, and 31st March 1891, 10 to 12. Chemistry, 21st July 1890, and 23rd March 1891, 11 to 1. Botany, 21st July 1890, and 23rd March 1891, 2 to 4. Natural History, 22nd July 1890, and 24th March 1891, 11 to 1. Geology, 22nd July 1890, and 24th March 1891, 2 to 4. Economic Science, 17th October 1890, and 31st March 1891, 1 to 3 each day.

Second B.Sc. Examination. Agriculture, 17th October 1890, 9 to 11, and 31st March 1891, 10 to 12. Chemistry, 16th October 1890, 9 to 11, and 31st March 1891, 10 to 12. Veterinary Hygiene, 16th October 1890, and 31st March 1891, 1 to 3 each day. Engineering, 5th November 1890, and 6th April 1891, 11 to 1.

Names to be given in, Certificates shown, and Fees paid on or before 6th October 1890 and 9th March 1891.

Examination Papers for Degrees in Science.

SECTIONS C, D, E, F.

PRELIMINARY EXAMINATION.

[*For Questions in the Preliminary Subjects, see under Preliminary Examinations for Degrees in Medicine.*]

FIRST EXAMINATION FOR B.Sc.

[*For Questions in Mathematics and Natural Philosophy for Degrees in Sections C and D, see under Examination in Arts; and for Questions in Chemistry, Botany, and Zoology for Degrees in Sections C and F, and in Chemistry for Degrees in Section D, see under First Professional Examination for Degrees in Medicine.*]

Section E.—Department of Public Health.

LABORATORY WORK.

22nd July 1889.—11 *to* 1 *o'clock.*

1. How could you quantitatively determine albumenoid matter by copper? State the precautions necessary.
2. Describe the working details of a method of determining the amount of oxygen dissolved in a potable water. What precautions would you take in collecting the sample of water?

24th March 1890. — 11 *to* 1 *o'clock.*

1. Distinguish between the *absolute* and the *relative* humidity of the air of a room. How is relative humidity determined? The temperature of the dry bulb thermometer is 57° F.; the temperature of the wet bulb is 51° F. Calculate the relative humidity.[1]
2. Microscopical Examination of Water:—
   What organic matters may be detected by the microscope—
   (*a.*) Dead;
   (*b.*) Living?
   How may the result of a microscopical examination affect your opinion as to the suitableness of a water for domestic consumption?
   How can you detect living organisms which cannot be revealed by the microscope alone?
3. State and give the rationale of two processes for the detection of nitrites in water depending respectively upon—
   (*a.*) The reducing action of nitrites.
   (*b.*) The oxidising action of nitrites.

PRACTICAL WORK.

The following are examples of what were given at this Examination:—

March 1889.

(*This part of the Examination lasts four days.*)

1. Quantitative determination of nitrites in a water.
2. Quantitative determination of albuminoids in wheat flour.
3. Examination of air, chemical and bacteriological.

[1] Candidates will be supplied with the necessary arithmetical data.

PHYSICS.

22nd July 1889.—2 *to* 4 *o'clock.*

(*Not more than twelve questions to be answered.*)

1. What is meant by the mean density of the earth, and how can it be found?
2. What determines the duration of twilight?
3. State Boyle's Law, and point out how air deviates from it.
4. Explain the production of dew, stating the chief circumstances which favour it.
5. Point out the analogies between the motion of water in pipes and that of electricity in wires.
6. Explain the action of a lens of short focus when used as a magnifier.
7. State the nature of the chief circulation in the air, and in the ocean, and point out the cause.
8. What are the chief features of cyclonic motion, and how is it produced?
9. What is the most effective physical (not chemical) process for obtaining ozone?
10. Explain what is meant by the rain-band, and describe the instrument used in observing it.
11. Describe generally the action of a lightning-rod, and state the chief precautions to be attended to in erecting one.
12. Point out why fine powders sink so slowly in water. Has the temperature of the water any influence, and why?
13. Define temperature, independently of any instrument for its measurement.
14. Why can one pull out a nail more easily with the aid of pincers than with the fingers?

24th March 1890—2 *to* 4 *o'clock.*

(*Not more than four of the sub-heads in each of the following questions to be attempted.*)

1. Explain briefly the physical cause of—

(*a*) Spring and neap tides; (*b*) The heave of the sea; (*c*) The spherical form of rain-drops; (*d*) The viscosity of air; (*e*) The plasticity of ice; (*f*) Halos; (*g*) Precession of the equinoxes; (*h*) The equation of time.

2. Describe one process for finding—

(*i*) Longitude; (*j*) The rigidity of a solid; (*k*) The specific gravity of a soluble salt; (*l*) The speed of light in space; (*m*) The maximum density-point of water; (*n*) The magnifying power of a telescope.

3. Enunciate, and state some immediate consequences of—

(*o*) Newton's Second Law of Motion; (*p*) Kepler's Third Law; (*q*) Charles' Law; (*r*) Hooke's Law; (*s*) The Law of Single Refraction; (*t*) Ohm's Law.

Section F.—Department of Agriculture.

AGRICULTURE AND RURAL ECONOMY.

18th October 1889.—9 *to* 11 *o'clock.*

1. What are the general advantages of Liming? In what state should it be applied to the land? What weight per imperial acre is considered an average dressing? Is lime an exhaustive or a fertilising agent? To what description of soil should burnt clay be applied, and what are the practical results?

2. State the cost per horse power of the different mechanical motors usually employed on the farm? With a head of eight feet and a constant but limited supply of water, what would be the difference of efficient power given off by a well-constructed water wheel and a modern turbine?

3. Describe briefly the best method of planting and training a white thorn fence. State cost of preparing the land, the value and number of plants per yard, and whether a double or a single row is preferable. Assuming that the fence is planted on open ground, it will require protection on each side; what is the best and cheapest material to use for this purpose? how much per yard rnnning will it cost? On average soil in a lowland district, how many years will elapse before the young quick sets become a fence?

4. On a tillage farm worked on a six course shift where a large head of stock are wintered in the yards, for what crops would you apply the farmyard manure, and in what quantity? What are the best supplemental artificial manures for the turnip crop, and what for mangle? Is sulphate of ammonia or nitrate of soda preferable for cereals? When and in what quantities should they be applied? What percentage of soluble phosphate should a good sample of ground bones contain, and what percentage of ammonia? How do you compare the value of a sample of ground bones with that of a mineral superphosphate of say 32 per cent. soluble?

5. Describe the best known system of making ensilage. Name some of the economical advantages as to cost, compared with hay. Is sour or sweet ensilage preferable? Acre for acre, is ensilage more valuable than good hay for the production of meat or milk, or for the growth of store cattle? Is it best used alone or in conjunction with other food?

6. Give the botanical name and describe the habits of growth, feeding value, and description of soil or geological formation most congenial to the healthy development of eight distinct varieties of the more valuable pasture grasses common to Great Britain.

28th March 1890.—10 *to* 12 *o'clock.*

1. (*a*) Describe the best season and most approved system of applying lime to the soil on a permanent pasture; (*b*) on tillage land. What quantity should be applied per acre? Name the chemical changes which take place in the nitrogen, phosphoric acid, and potash contained in the soil by a dressing of hot lime. Are these changes conducive to the fertility of the soil or otherwise?

2. Describe generally the construction of a sheaf-binding reaper. On fairly level land and with standing crops, what acreage can be cut per day, allowing a relay of horses, and what will be the cost per imperial acre, including stooking?

3. Give a detailed statement of the gross cost of a man and pair of horses employed on an ordinary tillage farm in the Lothians for one year, including blacksmith, saddler, and veterinary charge, insurance, and depreciation on the horses, valued at £40 each. How many working days do you estimate in a year? How much does each horse cost per day, including share of man's wages?

4. What is the best rotation of forage crops on a light land farm in a southern county where the object is to increase the fertility of the soil and maintain the maximum head of stock? Enumerate the succession of crops in their order, dates of sowing, and manures applied.

5. Describe the best system of preparing, laying down, and managing new pasture on a clay soil during the first six years. How would you stock the land, and the use of what manures and feeding stuffs would you recommend?

6. What are the chief constituents of value in ordinary farmyard manure? What is the difference in value between the solid and liquid voidance? What is the difference in the value of the manurial residue of a dairy cow in full milk, a young growing animal, and a mature bullock in preparation for the butcher, when fed alike as to the quantity and quality of food? What proportion of the theoretical value do you allow for waste under the varying circumstances of (*a*) covered yards; (*b*) open yards; (*c*) when the dung is drawn from the yard and placed in a heap in the field? What proportion of the value of farmyard manure can you recover in a single rotation under a four course system?

GEOLOGY.

23rd July 1889.—2 *to* 4 *o'clock.*

Only Six Questions to be attempted.

1. What are the principal natural agents employed in the disintegration of Rocks?

2. Give the composition of Augite and Olivine, and describe the chemical action of rain on these minerals.

3. What is the general character of the soils that overlie granite,

chalk, and carboniferous limestone? Explain how these soils have been formed.

4. Why is deep ploughing on steep slopes where boulder-clay forms the sub-soil rarely advisable?

5. Why is the soil where two geological formations meet generally more productive than that which overlies the two formations separately? Give an example.

6. Describe the systems of joints met with in bedded sedimentary rocks.

7. Describe the geological action of a river.

8. What is an Artesian Well? Draw a section to show the geological structure which renders such wells possible.

25th March 1890.—2 *to* 4 *o'clock.*

1. Give some account of the origin of *Soil.*

2. What is the composition of *Apatite*, *Rock-salt*, and *Gypsum?* How do they occur?

3. Why is it that the *Soils* overlying *Boulder-clay* are of very unequal value, being in some districts poor, and in others fairly fertile?

4. Explain how it is that good arable soil often occurs where two different geological formations meet, although neither of these alone may yield good soil.

5. Describe the character of the soils that result from the weathering of *Limestone*, *Basalt*, and *Granite.*

6. What is the origin of *Moor-pan* or *Bog-iron?*

7. Why is it that in sub-tropical and warm-temperate regions the thickness attained by disintegrated rock-material is much greater, as a rule, than in latitudes like ours?

8. Give two examples of each of the following kinds of rock:—*Chemically-formed*, *Mechanically-formed*, *Crystalline*, *Igneous*, and *Organically-derived rocks.* Describe shortly the petrological character of the rocks you mention.

ECONOMICS.

18th October 1889.—1 *to* 3 *o'clock.*

1. What are the principal advantages and disadvantages of an extensive system of peasant proprietors?

2. Examine the effects of heavy import duties on corn. If possible give historical illustrations.

3. What is meant by "the appreciation of gold," and how does it affect the agricultural interests?

4. Can the rent of agricultural land be considered as part of the cost of agricultural produce?

5. What are the principal causes affecting wages and profits in agriculture?

6. Examine the difficulties in State ownership and management of land.

7. Explain the meaning of and the relations between—Fair Rent, Free Sale, Fixity of Tenure.

8. Give the general arguments in support of Free Trade, and state and examine any popular objections.

28th March 1890.—1 *to* 3 *o'clock.*

1. Compare the relative advantages and disadvantage of farming on a large and small scale respectively. Consider different cases.

2. State the theory of economic rent. What are the principal causes of the recent fall of agricultural rents in this country?

3. Give some account of the Corn Laws and the reasons which led to their repeal.

4. Compare the relative advantages of State ownership and private ownership of land.

5. What are the principal causes affecting general prices? What classes are most injured by a general fall in prices?

6. Give the strongest arguments you can in favour of Free Trade, and notice the exceptions mentioned by Adam Smith.

7. Give the principal general rules for taxation. If a 10 per cent. tax were imposed upon all agricultural rents, on whom would it really fall?

SECOND EXAMINATION FOR B.Sc.

Section C.—Department of Physical and Natural Science.

(*a*) THE MATHEMATICAL SCIENCES.

[*For questions in the Mathematical Sciences, see under Examinations for Degrees in Arts with Honours in Mathematics.*]

(*b*) THE PHYSICAL EXPERIMENTAL SCIENCES.

EXPERIMENTAL PHYSICS.

17th October 1889.—1 *to* 4 *o'clock.*

(*Answer, fully, six at most of the following questions.*)

Describe a method of finding:—

1. The duration of Fluorescence.
2. The time of an Impact.
3. The pitch of a musical sound.
4. The ratio of the Static and Kinetic electrical units.
5. The specific inductive capacity of a liquid.

6. The density of saturated steam at any assigned temperature.
7. The boiling point of liquid oxygen.
8. The range of sensible molecular force.
9. The speed of sound in water at different temperatures.
10. The wave-lengths of the rays from incandescent hydrogen.

Saturday, 12*th April* 1890.—1 *to* 4 *o'clock.*

Describe, with full experimental or other details, a method of finding :—

1. The period of the reciprocating discharge of a condenser.
2. The conductivity of surface rock, by observations of sunk thermometers.
3. The components of a musical sound.
4. The speed of Light in water.
5. The specific inductive capacity of a solid dielectric.
6. The density of saturated steam at any assigned temperature.
7. The effect of pressure on the maximum density point of water.
8. The number of particles in a cubic inch of air.
9. The constant of Precession.

CHEMISTRY.

22*nd July* 1889.—11 *to* 1 *o'clock.*

1. Give as complete a list as you can of pairs of inorganic acids differing from one another in amount of oxygen only, and discuss their constitution, and that of their salts.
2. What is the constitution of the Thiosulphates? Give the evidence.
3. How can Periodic Acid be prepared, starting from Iodine?
4. State what you know of the compounds formed by adding Ammonia to Salts of Copper.

2 *to* 4 *o'clock.*

5. Give a classification of metallic cyanides, including double salts.
6. What are "Ketone Acids"? Give general methods for their formation, and state their general properties.
7. Give the constitution, and the evidence for it, of five of the following :—Alizarin, Asparagine, Betaïne, Cacodylic Acid, Dulcite, Furfurol, Fumaric Acid, Terephthalic Acid, Resorcin, Thiophen.
8. State what you know of Raoult's method for determining the molecular weight of a substance by observing the freezing point of its solution.

24*th March* 1890.—11 *to* 1 *o'clock.*

1. Describe, and as far as possible explain, the action of steam on metallic iron, and that of hydrogen on oxide of iron.
2. Point out the chief differences between the Stannic and the Meta-

stannic compounds, and give processes for preparing one typical example of each.

3. How can you determine (*a*) the total carbon, (*b*) the combined carbon in a specimen of cast iron?

4. What is the nature of the liquid produced when phosphorus is exposed to moist air? How would you analyse it quantitatively?

5. How is Hypochlorous Anhydride prepared? Has any special care to be taken in preparing the materials?

6. What is meant by the "heat of formation" of a substance? Illustrate your answer by an example. You are not required to give numerical values.

2 to 4 o'clock.

7. By what methods can the molecular weight of a non-volatile substance be approximately determined? Describe one of these methods with some degree of detail.

8. Give the constitution, with evidence for it, of six of the following substances:—Alanine, Anethol, Anthranilic Acid, Atropic Acid, Betaïne, Chloranil, Chlorpicrin, Indolisatin, Leucine, Styrol, Tyrosine.

9. How is Acetoacetic Ether prepared? State what you know of its properties.

(*c*) THE NATURAL SCIENCES.

BOTANY.

22nd July 1889.—*2 to 4 o'clock.*

(*Four questions only to be answered.*)

1. Write an account of the life-history of Œdogonium. Discuss its affinities.

2. Describe the development of the sporangium in any one leptosporangiate plant, and also in any one eusporangiate plant.

3. Give an account of the phenomena of nutation. What explanation of these phenomena can you give?

4. Describe the histological changes which accompany defoliation in a deciduous-leaved plant. Give examples of similar phenomena in the case of axial structures.

5. What position in a systematic arrangement of plants would you assign to Isoetes? Give your reasons for so placing it.

6. In any group of fungi trace the gradual appearance of apogamy, and point out in the case you select how modifications of the vegetative structures are co-related with the appearance.

Monday, 24th March 1890.—2 *to* 4 *o'clock.*

(*Four questions only to be answered.*)

Illustrate your answers by drawings whenever possible.

1. Describe fully the differences observed between a plant grown under normal conditions and one of the same species grown in darkness (*e.g.*, a potato). What explanation can you give of these differences?

2. The section of apetalous Dicotyledons includes orders related to those of the Polypetalæ and Gamopetalæ. Point out these relations and discuss their value.

3. Give an account of the method of sexual reproduction observed in Ascomycetes, and describe the products of fertilisation in the cases you mention.

4. Discuss the question of the structure, mode of formation, and growth of the cell-wall in plants. Make your answer, as far as possible, historical.

5. Group the Vascular Cryptogams, recent and fossil, so as best to illustrate their phylogenetic relationships. Give your reasons for assigning to each group the position in which you place it.

6. Describe the inflorescences and flowers in the British genera of Cupuliferæ.

7. Write an account of the life-history of any two of the following:—*Polysiphonia fastigiata*, *Ascobolus furfuraceus*, *Anthoceros lævis*, *Sphagnum cymbifolium*.

PRACTICAL BOTANY.

1. Make preparations of Specimen A to show fully its structure. Mount your preparations, and leave them for inspection. Make drawings of your preparations sufficient to enable you to give a list of explanatory references.

A. Petiole of *Eucephalartos*.

2. Refer to their natural orders Specimens B and C. Draw the floral diagram of each.

B. *Edwardsia grandiflora*. C. *Tranciscea discolor*.

3. Identify and briefly describe Specimens D, E, F, G, H, I, and K.

D. Young sporophyte of *Sphagnum*; E. Zoosporangia of *Saprolignia*; F. Peristome of *Funaria*; G. *Lallicea Squamaria*; H. *Euphorbia Cyparissias*; I. *Protomyces Ægopodii*; K. *Polytrichum commune*, male plant.

ZOOLOGY.

23rd July 1889.

1. Point out any facts you are acquainted with in favour of the view that the Dipnoi should be classed with the Amphibians.

2. State what you know as to the significance of polar bodies.

3. Describe the appendages of Limulus, and indicate how Limulus is related to other Arthropoda.

4. Give a short account of the Insectivora, including the distribution of the more important members of the group.

5. Describe fully the auditory organ of Sepia, and give a short account of the various modifications of Otocysts in the group Invertebrata.

25th March 1889.

(*Time, two and a-half hours.*)

1. Give a short account of the Cephalopoda (including their reproduction and development), and indicate how the dibranchiata differ from Aplysia and other Gastropoda.

2. Contrast the skeleton of Chilone and Alligator.

3. State what you know of the lateral line system of vertebrates, referring especially to the Ichthyopsida.

4. Give a short account of the fauna of Borneo and New Zealand, and of a typical Oceanic Island.

5. What do you understand by Pangenesis and by Panmixia? Explain fully.

PHYSIOLOGY.

22nd July 1889.—11 *to* 1 *o'clock.*

1. Describe the method by which the gases may be extracted from the blood by a Torricellian Vacuum, and their several amounts measured.

2. Give an account of the functions of the sympathetic nervous system in its relation to various tissues and organs in the body.

3. Describe the microscopic appearances of a vertical transverse section of the posterior third of the tongue of such an animal as a cat, or rabbit.

24th March 1890.—11 *to* 1 *o'clock.*

1. Give an account of the functions of the elasticity of Capillaries, Arteries, Ventricles of Heart, Lungs, and Crystalline Lens.

2. Give an account of the production of fat in the mammary glands and elsewhere in the body.

3. Describe the experimental arrangements for studying the electrical properties of muscle and nerve (omitting use of Differential Rheotome). Give an account of the electrical properties of these tissues.

4. On looking at a faintly-illuminated sky through a watery solution of chrome alum a spot appears in the visual field; describe its colour and shape, explain the cause of its appearance, and show how our knowledge of the peripheral mechanism of the sense of sight has been advanced by this experiment.

GEOLOGY, INCLUDING PALÆONTOLOGY AND MINERALOGY.

23rd July 1889.—2 *to* 4 *o'clock.*

(*Not more than two questions under each division to be attempted.*)

A.

1. Give some account of the mode of formation of a *Glacier*, and the work which it performs as a geological agent.
2. Describe the chemical action of Rain on *Orthoclase*, *Calcite*, *Olivine*, and *Hornblende.*
3. What is *Breccia*, and under what various conditions has it been formed?

B.

4. Give some account of the *Holohedral forms* of the *Cubical System.*
5. Give the mineralogical characters of *Leucite*, *Nepheline*, *Glauconite*, *Magnetite*, *Marcasite*, *Pistazite*, and *Sphene.*
6. Give the macroscopic and microscopic characters of *Micaschist*, *Trachyte*, *Obsidian*, *Porphyrite*, *Syenite*, and *Quartzite.*

C.

7. Draw *one section* to illustrate the following structures:—*Isoclinal folds*, *Unconformity*, *Overlap*, *Neck*, *Dyke*, *Fault*, *Outlier*, *Inlier.*
8. Describe the systems of *Joints* met with in *Granite* and regularly bedded sedimentary rocks, such as *Limestones*, *Sandstones*, and *Shales.*
9. In what various ways do the *Ores of the metals* occur?

D.

10. Construct a table of the Palæozôic systems, and place opposite each sub-division the names of a few characteristic fossils.
11. Give some account of the vertebrate fauna of the Jurassic system.
12. Describe the structure of *Belemnites.*

Tuesday, 25*th March* 1890.—2 *to* 4 *o'clock.*

Not more than Three Questions under each Division to be attempted.

A.

1. In what various ways are Cascades and Waterfalls formed by river-action?
2. Describe the formation of Icebergs and Floe-ice.
3. Describe the weathering of Basalt and Granite, pointing out the chemical changes which the constituent minerals undergo, and the decomposition-products which are formed.
4. What are Fissure-eruptions?

B.

5. In what respects do the *open* and *closed* forms of the Tetragonal system differ from the *cube* and *regular octahedron?*

6. Give particularly the characters of Leucite, and explain its peculiar behaviour in polarised light. How does it occur in nature?

7. Give some account of the Orthorhombic Pyroxenes. What part do they play as rock-formers?

8. Give the macroscopic and microscopic characters and the geological habitus of Andesite, Pitchstone, Trachyte, Hornblende-schist, Gabbro, and Serpentine.

C.

9. Define Lamination, Foliation, and Slaty cleavage.

10. What is Fan-shaped structure?

11. Draw a ground-plan of a Fault traversing *anticlinal* strata, marking the direction of downthrow, and showing how the outcrops are affected.

12. Describe how Sandstone, Shale, and Limestone are usually affected along the line of junction with a massive intrusive rock.

D.

13. Describe the physical conditions which attended the accumulation of the Cretaceous system in Europe.

14. Give some account of the Fishes of the Old Red Sandstone.

15. Describe the structure of *Trilobita* and *Crinoidea.*

16. What organisms were most active as Limestone-formers in Palæozoic, Mesozoic, and Cainozoic times?

Section D.—Department of Engineering.

DYNAMICS.

Tuesday, 5th November 1889.—1 *to* 4 *o'clock.*

1. Find the speed, in feet per second, which will be produced by a force of 2 lbs. weight acting in a fixed direction on a mass of one ton (originally at rest) for one hour.

2. A smooth sphere rests upon three pegs. Show how to find the pressure upon each.

3. Find the resultant of two simple harmonic motions, of nearly equal period, in one line. Show how to apply your result to the combination of the lunar and solar tides.

4. Given any number of forces acting at definite points of a rigid body. Find the condition that they may be reducible to a single force.

5. Water loses 1/20,000 of its bulk under one atmosphere of pres-

sure, and its mass is 62·5 lbs. per cubic foot. What would be the increase of depth of a lake, a mile deep, if gravity were diminished to half?

6. Analyse the strain produced by displacing all points of a body, in parallel directions, by amounts proportional to their distances from a given plane. When does the distortion become a simple shear?

7. Given the circumstances of projection of a particle, under the action of a central force varying inversely as the square of the distance, find the criterion that the orbit may be an ellipse, and determine the direction of the major axis.

8. Form and integrate the equation of (rectilinear) motion of a mass which picks up (from rest) additional matter proportional to the space it has traversed, and which is acted on by a force proportional to its distance from a fixed centre.

9. Calculate the attraction of a uniform circular plate upon a point in its axis, and thence find the attraction of a uniform sphere upon an external point.

10. Form the equations of equilibrium of a uniform chain, under the action of any forces.

Hence find the law of force, parallel to a given line, that the catenary may be a parabola.

11. Explain, generally, why a boiled egg, made to spin rapidly on a table, raises itself on one end.

12. Calculate, from the data of No. 5, the speed of sound in water.

Saturday, 12th April 1890.—1 *to* 4 *o'clock.*

1. A body is moving parallel to a fixed plane; determine the co-ordinates of the instantaneous axis.

2. A particle moves under a central force $\frac{\mu}{r^2}$, and its initial velocity V, at a distance R from the centre of force, is given by $V^2=\frac{4\mu}{R}$; show that it moves in an hyperbola, and determine the asymptotes.

3. Find the time of complete revolution of the bob of a conical pendulum, and the time of a small oscillation in a vertical plane.

4. Determine the amount of kinetic energy lost in the direct collision of imperfectly elastic spheres. What becomes of this energy?

5. Two unequal uniform ladders are hinged together, and placed on a rough horizontal plane. Determine the angle between them when they are on the point of slipping.

6. Find the centre of gravity of a uniform circular arc.

7. Find the moment of inertia of a right cone about any axis through its vertex.

8. Compare the times of descent of a cylinder rolling, and sliding frictionlessly, down an inclined plane.

9. A perfectly rough horizontal plane revolves round a vertical axis with a constant angular velocity. Determine the motion of a sphere placed without initial velocity on the plane at any point.

10. A flexible plank is fixed at one extremity ; compare the deflection of the free end, when there is a uniform load, and when the whole load is concentrated at the free end. The weight of the plank itself to be neglected.

11. Find the position of the metacentre in the case of a right cone, floating with its axis vertical, and vertex downwards.

12. Write down the equations of motion of a fluid in motion parallel to a fixed plane, and find the condition that the motion shall be irrotational.

ENGINEERING.

Wednesday, 6th November 1889.—11 *to* 1 *o'clock.*

1. Describe fully the methods employed in laying out railway curves by means of a theodolite.

2. In designing and laying out works for the sewerage of a town, what information should be obtained, and in what manner would it be used ?

3. What are the conditions of stability of a masonry arch ring? Describe the steps that must be taken to design an arch, and ascertain its stability.

4. When steam is allowed to expand in a cylinder, what is the relation which is maintained between the pressure and volume? What is meant by the terms "back-pressure" and "clearance" in a steam-engine ?

5. What are the characteristics of good cast iron, steel, and wrought iron, and how can inferior qualities be recognised ?

Answers should, as far as possible, be illustrated by sketches or diagrams.

Wednesday, 6th November 1889.—2 *to* 4 *o'clock.*

1. Describe how you would test, and correct if necessary, the permanent adjustments of a spirit level.

2. A counter shaft 4 inches diameter is employed to transmit 16 H.P. and makes 160 revolutions per minute. Find the twisting moment, and indicate what further data is necessary, and how you would determine whether the shaft was of sufficient strength.

3. Two steel bars are joined by a single rivet with a lap joint. Describe with diagrams four ways in which the joint may fail under tension, and indicate in each case the method of determining the resistance.

4. A sluice placed vertically in a dock gate is 2 feet square, the top of it is 9 feet below the surface. What is the pressure on it and the

direction of the pressure? What would the pressure and direction of pressure be were it turned about an axis passing through its centre of gravity till it was horizontal?

5. Sketch an iron roof truss suitable for a roof 65 feet span. Describe the method to be pursued in determining the load to be provided for, and the amount and nature of the strains to which each member is subject.

Answers should, as far as possible, be illustrated by sketches or diagrams.

Thursday, 7th November 1889.—11 *to* 1 *o'clock.*

1. The cross-sections of a cutting are taken one chain apart, and the areas of three successive sections are 300, 400, and 500 square feet. Find the quantity of material in cubic yards between the first and the last of these sections.

2. A pair of 500 H.P. engines are making 70 revolutions per minute. They work on rectangular cranks, and the connecting rods are each 4 times the crank length. Assuming the resistance and steam pressure uniform, determine the maximum and minimum moments of crank effort, and the amount of energy fluctuation.

3. A braced semi-arch is 10 ft. deep at the wall and projects 40 ft. The upper flange, which is horizontal, is divided into four equal bays, and sustains a uniformly distributed load of 40 tons. The lower flange forms the segment of a circle of 104 feet radius. The bracing consists of a series of isosceles triangles, of which the bases are the equal bays of the upper flange. Determine the stresses in all the members.

4. What constitutes the characteristic difference between a reaction-wheel and a turbine? The inside diameter of the wheel of a turbine of the Fourneyron type is 9·5 inches, and the outside diameter 14 inches. Under an effective head of 270 ft., how many revolutions will it make in a minute?

5. In what do grey iron, white iron, steel, and wrought iron differ from each other? A bar of soft steel is gradually loaded to near its tensile breaking-point, when it is gradually unloaded. It is then gradually re-loaded until it is fractured. Construct a diagram showing the relation between the extensions of the bar and the corresponding loads, and explain its most important features.

Answers should, as far as possible, be illustrated by sketches or diagrams.

Thursday, 7th November 1889.—2 *to* 4 *o'clock.*

1. Explain fully how a "contour-survey" is made, and mention some of its most important uses.

2. One of the web-bars of a W.I. Warren girder, rectangular in section, and 10 feet long, has to sustain loads varying between a steady maximum tension of 20·2 tons, and a maximum tension of 40·4 tons,

and another and similar bar has to sustain loads varying between a maximum compression of 8·7 tons, and a maximum tension of 14·4 tons. Allowance being made for buckling in the latter case, what should be the sectional area of each bar?

3. A railway cutting slopes at 1½ to 1, and there is a retaining wall, 4 feet high at the bottom of the slope. Assuming that the earth weighs 130 lbs. per cubic foot, and that its angle of repose is 36°, determine the average intensity of the thrust it will exert against the wall, and what the horizontal component, and overturning moment of that thrust will be respectively.

4. The centre lines of a pair of shafts intersect at an angle of 60°. The shafts are to be connected by bevel gear, so that one shall revolve 250 times, while the other revolves 90. Determine the pitch surfaces.

5. The receiver of a compound steam-engine is half the volume of the high-pressure cylinder, and the cylinder pressure at release is 25 lbs., and that of the receiver 15 lbs. per square inch. Calculate the loss of work per lb. of steam, and compare your result with what would be the case supposing the receiver volume were double, instead of half, that of the cylinder.

Answers should, as far as possible, be illustrated by sketches or diagrams.

Monday, 7th April 1890.—11 *to* 1 *o'clock.*

1. Show a sectional sketch of a telescope tube, and the relative positions of the object glass, eye glass, and cross wires. By means of your sketch describe the cause of parallax, and show how the adjustment is made. Give a ready means of seeing if there be any parallax.

2. Sketch a section of a filtering tank for a town's water supply. What is the usual quantity allowed to pass through the filter per square yard per hour? How many square yards of filtering surface would be required for a town with 100,000 inhabitants, using 30 gallons per head per day?

3. A road skirting the shore is being damaged by the sea. Show a section of a protecting wall to prevent further inroads. State what you know about the action of groins. Would they be of any use in a case of this kind?

4. A wrought-iron plate girder 50 feet span, 1 ton per foot-run dead load, and 1 ton per foot-run live load. Assume that the web takes the shearing stresses. Select a depth for the girder. Find the maximum stresses on, and the dimensions of, the top and bottom members at the centre, and at 10 feet from the abutments. Show by a sketch what thickness of plates you would use in bottom member, and their lengths, also position of uprights on web. What fixes the breadth of the top member? What is meant by camber, and how much should this bridge have?

5. Sketch an indicator diagram of a steam-engine, and show the

points of admission, cut off, opening of exhaust, and state any information you can gain from it. What is meant by clearance and cushioning? How do they affect the efficiency of the engine?

Answers should, as far as possible, be illustrated by sketches or diagrams.

Monday, 7th April 1890.—2 *to* 4 *o'clock.*

1. The line of collimation of a level is thought to be out of adjustment. When the level is placed midway between two points, A and B, 500 feet apart, the reading on A is 8·26, on B 7·84. The level is then placed 50 feet outside of B, and the reading on B is 6·20. If the line of collimation be in adjustment, what should be the reading on A? Suppose it be not in adjustment, name the kind of level you are working with, and how you would adjust it.

2. What is the linear arch? State the limits of its position in a stone arch ring. A stone circular arch has a 100 feet span, and a rise of 20 feet from the springing. (*a*) Given the formula $D = \cdot 4\sqrt{R}$, find the depth of the ring at the crown. And (*b*) suppose the load on the arch equally distributed, take any load, and find the horizontal pressure at the crown by the method of moment, and calculate the thickness of ring for granite crushing strength 50 tons per square foot.

3. 250,000 tons of water has to be raised 10 feet every twenty-four hours, calculate the horse-power of engine required, supposing the steam pressure to be 60 lbs. per square inch above the atmosphere, and cut off at half stroke, the engine and pump direct double acting. Calculate the size of steam cylinder and ports, and size of pumps and valves. (Hyp. Log of 2=0·693.)

4. Sketch a section (*a*) of an earthen reservoir dam, showing the position of the different kinds of material used; (*b*) of a stone reservoir dam, giving the batters approximately. In what circumstances would you prefer a stone dam to an earthen one? Give your reasons fully.

5. A canal cutting is 25 yards wide at bottom, and the length of section is 1000 yards; the heights of the ground above the bottom are at ends A and B 15 yards and 20 yards respectively, and midway 22 yards. The cutting is in soft for 10 yards down at A, and at B 20 yards, and midway 12 yards. Below these depths it is rock; the slopes for rock are $\frac{1}{2}$ to 1, and for soft 2 to 1. Calculate the quantity of rock and quantity of soft to be excavated, take fair prices, and estimate the total cost of section.

Answers should, as far as possible, be illustrated by sketches or diagrams.

Tuesday, 8th April 1890.—11 *to* 1 *o'clock.*

1. Describe fully how you would set out the centre line of a railway, giving, with examples, some methods of setting out the curves (*a*) with chain, (*b*) with theodolite.

2. Discuss the advantages of making a girder continuous over several spans. A continuous girder of uniform section and 8 feet effective depth consists of two 50 feet spans. One of the end bearings having settled 1 inch, find the maximum flange and shearing stress caused thereby.

3. Explain generally the methods of gauging rivers and streams. If the depth of water in a triangular notch be 2 feet for nine hours, and 1·5 feet for three hours, and the co-efficient of contraction be ·595, calculate the discharge during the whole twelve hours.

4. Investigate the general problem of the form of the teeth of wheels. The diameter of the pitch circle of an annular wheel to be used in transmitting motion from a water-wheel to a mill, is to be as near 24 feet as possible, and the pitch of teeth 4 inches; the velocity of the periphery 5·5 feet per second, and the first motion shaft is to make 30 revolutions per minute. Determine the diameter and number of teeth both of the wheel and pinion.

5. How must Watt's governor be modified for high speed? Find the travel of the collar for such a governor in terms of the speed and known qualities. Describe what happens when a governor is too sensitive.

Answers should, as far as possible, be illustrated by sketches or diagrams.

Tuesday, 8th April 1890.—2 *to* 4 *o'clock.*

1. Discuss the relative merits of the sextant and theodolite as surveying instruments, and describe how the adjustments of each are made.

2. Write down an expression for the safe load on a long pillar, explaining fully the meaning of the symbols you use. State also why it is that the strength of a long pillar depends on the modulus of elasticity of the material, while the strength of a beam is independent of its modulus of elasticity.

3. Discuss the problems of ventilating and flushing of sewers, and state (*α*) how, in a hilly district, you would prevent sewer gas from rising to the higher levels; (*β*) how you would calculate the power of a ventilating shaft.

4. What improvements did Fairbairn, Fourneyron, Thomson, and Girard respectively introduce into the construction of hydraulic motors? A Whitelaw's wheel is inverted so as to form a centifrugal pump, and the co-efficient of hydraulic resistance, referred to the orifices, is one-eighth. Determine the speed of highest efficiency, and the highest efficiency itself.

5. A triple expansion engine takes steam at 135 lbs. above atmospheric pressure, and expands 8 times. The temperature of the hot well is 100° Fahr., and the vacuum 26 in. Estimate the steam and coal consumption, the efficiency, and the efficiency relatively to that of the corresponding perfect engine. Assume, for expansion curve

$pv^{1.2}$=a constant; temperature, corresponding to 135 lbs. pressure =350° Fahr.; and corresponding volume of 1 lb. of steam=3·29 cubic feet.

Answers should, as far as possible, be illustrated by sketches or diagrams.

Wednesday, 9th April 1890.—10 *to* 1 *o'clock.*

1. Draw an idea diagram for a steam-engine receiving steam at 100 lbs. per square inch absolute, cutting off at $\frac{3}{8}$ stroke, and exhausting into the atmosphere. No compression; no wire-drawing; release at end of stroke. Diagram 3 inches long; vertical pressure scale 50 lbs. to 1 inch. State what assumptions you make in drawing the expansion curve.

2. Find graphically the moment of inertia of an equilateral triangle of 3 inches side about an axis passing through the C. of G. and parallel to one side.

3. Draw on a scale of 30 feet to one inch, the approximate path of a jet of water from a fire hose, under a pressure of 100 feet of water at the nozzle, when inclined at 30° to the vertical.

4. Two shafts lie, one in the continuation of the diagonal of a cube of reference of 4 feet side, and the other in the continuation of an opposite non-intersecting side. It is required to find the distance between the shafts as a preliminary to designing a skew bevel connection.

5. A quadrantal wing wall of an under-railway bridge, which is 10 feet radius on face, and 4 feet thick at ground level, and whose greatest height above is 10 feet, has a plumb back, and batters 1 in 10 on the face. Draw plan and elevation corresponding to a slope of $1\frac{1}{2}$ to 1. Scale 3 feet to 1 inch.

Inking in is unnecessary.

Wednesday, 9th April 1890.—2 *to* 5 *o'clock.*

1. Design the details of a locomotive piston and rod, according to the leading dimensions supplied.

2. A skew arch is to have a square span of 40 feet and a skew span of 46 feet; rise 8 feet; width within 6 inches of 30 feet; depth of ring 3 feet; width of stones on heading joint about 12 inches. Draw the development of the intrados and the extrados, showing the stones. Scale 5 feet to 1 inch.

(1) *and* (2) *are alternative.*

Section E.—Department of Public Health.

MEDICINE.

5th November 1889.—11 *to* 1 *o'clock.*

1. What are the essential phenomena of fever, and how do you explain them?
2. What relationships (if any) exist between lead poisoning and disease of the urinary organs?
3. State your opinions as to the present state of the controversy as to the nature of the cholera germ.

SANITARY LAW.

Tuesday, 5th November 1889.—2 *o'clock.*

I. Offensive Trades.

What is the law in urban districts regarding such trades as bone or tripe boiling, or tallow melting?

II. Vaccination.

What are the leading provisions of the Vaccination Acts?

VITAL STATISTICS.

I. Duration of Life.

(*a.*) What is meant by mean duration of life?
(*b.*) State approximately what it is in Great Britain.
(*c.*) Is it stationary, increasing, or diminishing?

II. Infant Mortality.

(*a.*) What is understood by infant mortality?
(*b.*) What is the chief cause of this?
(*c.*) At what season does this operate?
(*d.*) What are the principal insanitary causes which lead to it?

PRACTICAL SANITATION.

Wednesday, 6th November 1889.—11 *to* 1 *o'clock.*

1. What do you mean by climate? Mention the chief conditions and causes that influence it.
2. In a room containing 3000 feet of cubic space there are six adults, and they are supplied with 2000 cubic feet of air per head per hour. At the end of four hours how much carbonic acid will there be in the air of the room? Would you consider the air supply sufficient, and would it be possible to provide it without causing draughts?

3. How, from the known rainfall of a district, is the "available" rainfall from a gathering ground calculated for periods of drought, and how is the proper capacity of an impounding reservoir determined for a given population? Sketch a cross-section of the dam of such a reservoir, showing how it is usually constructed.

4. Write down and explain the fundamental equation upon which all calculations concerning the action of natural means of ventilation are based. How do the laws of friction influence the passage of a current of air through a ventilating trunk or tube?

5. Describe a well-constructed dust-bin, an efficient grease trap, and a good valve W.C. apparatus, indicating the special points in which each, if not properly constructed, may fail to fulfil its purpose as a sanitary agent.

It is essential that each answer be illustrated by one or more sketches or diagrams.

Section F.—Department of Agriculture.

AGRICULTURE AND RURAL ECONOMY.

18th October 1889.—9 *to* 11 *o'clock.*

1. State briefly the best rotation of crops under present circumstances and prices on a tillage farm of friable loam worth a rent, including rates, of 32s. per imperial acre. Give a detailed account of the cost of producing the different crops you name, and the probable yield of each crop.

2. Describe in detail the different operations as they occur in the preparation of the land and the cultivation of potatoes for the early markets. Estimate the separate cost per acre of labour, manure, seed, rent, and marketing. What is an average crop? What price will a field of potatoes usually realise per acre when ready to dig up by the end of June?

3. Describe the most approved system of root cultivation, with a detailed account of cost—(*a*) of mangels; (*b*) of swedes; (*c*) of common turnips. What is the average produce per acre of each crop?

4. Describe the best method of sheltering and feeding yearling "commercial cattle" intended for the butcher at two years old. State the composition and weight of the daily rations of each. What should be the average increase in live weight per head per week during the seven winter months? What is the probable quantity and value of the manure left by each animal?

5. Give a detailed statement of the cost of horse labour on the farm. Enumerate the kinds and quantities of food used, detailing their market values and the ratio of flesh-forming to heat and fat producers they contain. Include accounts of blacksmith, saddler, wheelwright, veteri-

nary surgeon, and insurance premium, and base your calculations on the number of probable working days in the year.

6. What is the best system of winter management of fattening sheep on a tillage farm? Should the roots be pulled and stored in heaps on the land or eaten off as they stand? What quantity of roots will a three-year-old wether, 16 lbs. per quarter, consume per day? Name the quantity and kind of artificial food and hay or straw chaff you would allow per day. What would be the daily gain in live weight? Would a hog or yearling sheep make more or less weight on an equal quantity and quality of food? If so, describe the reason why it does so.

7. What is the yearly average yield in imperial gallons of milk from a shorthorn dairy cow? What quantity of milk will produce one gallon of cream, and how much butter should this yield? What quantity of milk will produce one pound of cheese from the press? What per-centage will it lose in curing? What percentage of solids should a good sample of milk contain? Name the different solids and the average percentage of each.

28th March 1890.—10 *to* 12 *o'clock.*

1. What is the best width inside of a shed for dairy cows? What is the width of a double standing, that is for one pair of cows? What should be the depth and width of the manger, and the height of the manger above the floor level? What is the best material to use as a floor? How should the drainage be arranged? What is the best width of doors; should these open inwards or outwards? What should be the width of the feeding passage in front, and how should it be divided from the mangers?

2. Describe the best and most economical system of rearing calves from birth to the age of three months; give the quantities and chief chemical constituents of the auxiliary foods used. What is the best season of the year for rearing calves? What is the cheapest and best material to use as litter? Is an open or a close shed the best for calves?

3. Describe in detail the best balanced ration for (*a*) a dairy cow in full profit; (*b*) a young growing animal; and (*c*) a fattening bullock. Calculate and value the albuminoids and carbohydrates, add to their value the cost of attendance, from this amount deduct the manurial value of the excrements, showing the nett cost of each per day.

4. How many imperial gallons of milk of average quality, twelve per cent. solids, is required to make one gallon of cream? How many pounds of butter will a gallon of average cream produce? What price will the new milk realise to the producer with butter at 1s. 3d. per pound, and separated milk at 3d. per gallon, allowing 1d. per gallon for working expenses and profit?

5. What is the percentage of dead to live weight in a moderately fat bullock with beef at 7½d. per pound? What is the equivalent value of store animals? What is the average difference between the estimated

weight as calculated on the weigh-bridge and the actual weight when slaughtered?

6. What is the most profitable system of dealing with milk, cheese-making, butter-making, or selling raw milk at 6d. per imperial gallon on the farm; the top quotation for cheese is 6d. per pound, butter 1s. 3d. per pound, the bye products are worth 2d. per gallon? In the case of cheese, allowance must be made for shrinkage and the cost of labour, depreciation, and interest on plant.

CHEMISTRY AS APPLIED TO AGRICULTURE.

17th October 1889.—9 *to* 11 *o'clock.*

1. Illustrate and describe the action of micro-organisms in (*a*) the soil, (*b*) the making of silage, (*c*) the souring of milk.

2. Is it possible to mow a recently laid down grass field continuously year after year, without its suffering deterioration?

Give an instance of how this might be done, and state the chief points brought out in a comparison of manurial elements supplied to and removed in the crop.

3. In a feeding experiment, to test the value of one particular food as against another, give the leading considerations which should regulate the plan of the experiment so as to make it a rational and useful one.

4. What purposes does farmyard manure serve which cannot be equally well met by the use of artificial manures only? Give reasons, and state the circumstances under which this is best shown.

5. What would be the effect of feeding an animal with a diet (*a*) wholly nitrogenous in character, (*b*) wholly starchy?

6. Name the chief conditions for the rapid and effectual raising of cream from milk.

7. Is Silica essential as a plant food? State any experiments which have been made on this point.

29th March 1890.— 9 *to* 11 *o'clock.*

1. How is "Phosphorus" prepared? How does it occur in nature? What "oxides" and "acids" does it form?

2. Give the formulæ for the different Sulphides of Iron. Show the reactions which take place on treating each with

(*a*) Hydrochloric acid.
(*b*) Nitric acid.
(*c*) Aqua regia.

3. What is "Urea"? Give its formula. How may it be prepared? What products of decomposition does it yield on heating (*a*) alone, (*b*) with alkalies?

4. What is starch? How may its presence be detected in any mixture?

What takes place on heating starch
(*a*) alone to a temperature of 160° C.
(*b*) with water.
(*c*) with dilute Sulphuric acid.
(*d*) Nitric acid.

5 Give the formulæ for the following :—
(1) Caustic Soda.
(2) Bicarbonate of Potash.
(3) Sulphide of Calcium.
(4) Nitrate of Soda.
(5) Slaked Lime.
(6) Gypsum.
(7) Sulphocyanide of Ammonium.
(8) Ferrocyanide of Potassium.
(9) Prussian Blue.
(10) Alcohol.
(11) Acetic acid.
(12) Magnesium Sulphate.

VETERINARY HYGIENE.

Saturday, 29th March 1889.—1 *to* 3 *o'clock.*

1. Give a short history of pleuro-pneumonia contagiosa.
2. Enumerate the various animal parasites found in the horse, ox, sheep, and dog.
3. What are the causes of dyspepsia (indigestion) in the horse and ox?
4. What is influenza, its causes and the means to be adopted for prevention of its spread?
5. What are the signs of a pricked foot, and the necessary procedure to be adopted immediately on its discovery?
6. What is the most reliable basis for a sheep dip.

ENGINEERING.

Wednesday, 6th November 1889.—10 *to* 1 *o'clock.*

1. Explain in detail how you would conduct a chain survey of a large estate.
2. Describe (*a*) the box-sextant, (*b*) the circumferentor, and mention the special applications of each instrument.
3. What are the chief sources of error in levelling? What allowances are made to effect their elimination?
4. State the chief points to be observed in selecting a route for, and in laying out, a main road.
5. A cylindrical log of timber 50 feet long, balances about a point

20 feet from one end; it is also found to balance about a support placed under its middle point, if a weight of 20 lbs. is put at one extremity, and 120 lbs. at the other. How much does the log weigh?

6. A water-wheel (modulus 0·6) is actuated by a fall 20 ft. high, over which 150 cubic feet of water come per minute. The wheel is employed to raise water from the foot of the fall to a height of 50 ft. What quantity of water will be raised per minute, and what will be the H.P. developed?

7. Describe the construction of an eccentric for working the slide valve of an engine, and show that it gives the same motion as a crank and connecting rod.

8. Explain the advantage of working steam expansively and with condensation. Steam is admitted into a cylinder at 30 lbs. above atmospheric pressure (taken at 15 lbs. per sq. in.), and is cut off at a certain point, and then expanded to a pressure of 5 lbs. below that of the atmosphere. Given the length of stroke as $4\frac{1}{2}$ ft., at what point was the steam cut off?

9. What are the differences between (*a*) forge-pig and foundry-pig; (*b*) Bessemer, blister, and shear steel?

10. What bonds are usually employed in brickwork? State the principles upon which their strength and stability depend, and mention some points of importance that should be attended to in using bricks for structural purposes.

11. A beam spans an opening of 30 ft. It carries, 5 ft. from one point of support, a load of 3 tons, and at the same distance from the other, a load of 7 tons; and at the centre there is a load of 5 tons. Find the reactions at each point of support, and the shearing stress between the centre and the load of 7 tons.

12. Describe and explain any mechanism with which you are acquainted that will serve, in a machine for sawing timber into planks, to feed on the log at the end of each stroke of the saw.

Answers should, as far as possible, be illustrated by sketches or diagrams.

Monday, 7th April 1890.—9 *to* 12 *o'clock.*

1. How are the permanent adjustments of the dumpy-level made.

2. Show by means of an example how a closed circumferentor survey may be checked and corrected.

3. Explain the principle of the Vernier, and state how an instrument may be made to read to 15 seconds.

4. A road embankment is 30 feet wide at top, its heights at one chain distances are 0, 9, 10, 8, 12, 14, 0 feet respectively, and the slopes are 2 to 1. Calculate the solid contents.

5. How is force measured? A body weighing 108 lbs. rests on a smooth plane, and is made to move a distance of $11\frac{1}{2}$ feet in 5 seconds by the application of a certain force. Express it in absolute units.

6. State and explain the principle of work. The lever-handle of a crab is four times the diameter of the drum, and the wheel train consists of a pinion of 20 teeth driving a wheel of 100 teeth. Suppose an effort of 30 lbs. is applied at the end of the lever-handle, what load can the machine raise?

7. What forces are brought into play when a beam, supported at both ends, is loaded, and how are they equilibrated? A load of 500 lbs. placed on the centre of a supported bar of wood 7 feet long and 2 inches square breaks it. Find the load that will break another and similar bar of the same material 8 feet long, $2\frac{1}{2}$ inches broad, and 4 inches deep.

8. A W.I. shaft 3 inch diameter is driven by a pulley 3 feet diameter, and makes 100 revolutions per minute. What H.P. will it safely transmit, supposing the factor of safety is 8, and that a 1-inch shaft will break under 800 lbs. applied at the end of a 12-inch lever.

9. Describe some form of indicator. Sketch the indicator cards you would expect to obtain from the top and bottom of the cylinder of a *single*-acting condensing engine.

10. The cylinder of a steam-engine is 3 feet 6 inches diameter, and the length of stroke 5 feet. Supposing the steam pressure in the cylinder is 15 lbs. above atmospheric, and that the crank makes 80 revolutions per minute, calculate the H.P.

11. What are (α) dykes and (β) groins? Describe the construction of each, and state under what circumstances they may severally be employed.

12. Discuss the respective merits of the circular and egg-shaped sections for drains and sewers. What points require special attention in the selection and laying of earthenware tubes?

Answers should, as far as possible, be illustrated by sketches or diagrams.

EXAMINATION FOR D.Sc.

Section C.—Department of the Physical Experimental Sciences.

CHEMISTRY (ORGANIC).

26th July 1889.—10 *to* 4 *o'clock.*

Write a short essay on one of the following subjects:

1. Lactones, including Lactone Acids.
2. Bodies containing the *group* N_2.
3. Ketonic Acids, Fatty and Aromatic.

27th July 1889.—10 *to* 4 *o'clock.*

Write an abstract and criticism of the paper laid before you.

Degrees in Science.

DOCTORS OF SCIENCE.

The names of all the Doctors of Science of this University, previously to 1889, will be found in the Historical Appendix to List of Graduates published in 1889, pp. 132-134. The following are the names of the Doctors from 1885 to 1890, both years included :—

A. DEPARTMENT OF MENTAL SCIENCE.

1886. John Lightfoot, M.A.
1887. John Dundas Robertson, M.A.

B. DEPARTMENT OF PHILOLOGY.

1884. Robert Johnston Cownie, M.A.

C. PHYSICAL AND NATURAL SCIENCE.

a. Department of the Mathematical Sciences.

1888. William Peddie.[1]
1890. Alexander Crichton Mitchell.[2]

b. Department of the Physical Experimental Sciences.

1886. Hugh Robert Mill (Chemistry).[3]
,, John Waddell, B.A. (Chemistry).[4]
,, James Walker (Chemistry).
,, Andrew Thomson, M.A. (Chemistry).[5]
1887. Prafulla Chandra Rây, M.B. (Chemistry).
1888. James Burgess Readman (Chemistry).
1889. Thomas Rhymer Marshall (Chemistry).
1890. Hugh Marshall.

c. Department of the Natural Sciences.

1887. William A. Haswell (Zoology).[6]
,, George Neil Stewart, M.A. (Physiology).

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[1] Assistant to Professor of Natural Philosophy.
[2] Professor of Mathematics, Maharajah's College, Trivandrum, Travancore.
[3] Lecturer Heriot Watt.
[4] Professor of Chemistry, Royal Military College, Canada.
[5] Assistant Lecturer on Chemistry, University College Dundee.
[6] Lecturer on Natural History, University, Sydney.

D. DEPARTMENT OF ENGINEERING.

1888. Archibald Campbell Elliott.[1]

E. DEPARTMENT OF PUBLIC HEALTH.

1886. William Robert Smith, M.D.
,, Charles Henry Willey, M.D.
1887. Thomas Goodall Nasmyth, M.B.[2]
,, Edward William Hope, M.D.[3]
1888. John Berry Haycraft, M.D.
1890. James Anderson, M.D.
,, James Andrew Blair, M.B.
,, William John Brock, M.B.
,, John Stevenson, M.B.

Degrees Conferred in 1889-90.

THE DEGREE OF DOCTOR OF SCIENCE.

In the Department of the Mathematical Sciences.

18th April 1890.

Alexander Crichton Mitchell, B.Sc.
Thesis—"Experimental Researches on the Conduction of Heat."

In the Department of the Physical Experimental Sciences (Chemistry).

1st August 1889.

Hugh Marshall, B.Sc.
Thesis—"On the Oxidation of Cobalt Salts by Electrolysis."

In the Department of Public Health.

18th April 1890.

James Anderson, Scotland, B.Sc., M.D.
Thesis—"Typhoid Fever: its Cause and Prevention."

James Andrew Blair, Scotland, B.Sc., M.B., C.M.
Thesis—"Description of Original Research on Potable Waters."

William John Brock, Scotland, B.Sc., M.B., C.M.
Thesis—"Vital Statistics and Statistical Methods."

1 Assistant to the Professor of Engineering.
2 Medical Officer of Health, Beith, &c.
3 Lecturer on Public Health, University College, Liverpool.

John Stevenson, Scotland, B.Sc., M.B., C.M.
Thesis—"Milk: its Composition and Adulterations in India."

THE DEGREE OF BACHELOR OF SCIENCE.

In the Department of the Mathematical Sciences.

18th April 1890.

Johan Friedrich Wilhelm Kupferbürger.
David Arthur Welsh, M.A.

In the Department of the Physical Experimental Sciences.

1st August 1889.

John Edwin Mackenzie. | John Christian Sanderson.
Thomas Smith Murray. | John Campbell Smith.

18th April 1890.

John Halley Meikle, M.A. | James Adam Wilson, M.A.

In the Department of the Natural Sciences.

1st August 1889.

Frederic John Hare.

18th April 1890.

Robert Alexander Robertson, M.A.

In the Department of Engineering.

30th November 1889.

Colin John Ross.

18th April 1890.

John Baylie Don. | Andrew Prentice.
Thomas Blackwood Murray. | Robert Wills.

In the Department of Public Health.

30th November 1889.

Chas. Henry Bedford, M.B., C.M. | Robert Robertson, M.B., C.M.
Peter Fraser, M.D. | John Ross, M.B., C.M.
Wm. Hugh Hughes, M.B., C.M. | Wm. Cameron Sillar, M.B., C.M.
James Ritchie, M.A., M.B., C.M. | Don. Geo. Sutherland, M.B., C.M.
John Robertson, M.D.

In the Department of Agriculture.

1st August 1889.

Douglas Alston Gilchrist. | John James Jeffray.

18th April 1890.

John M'Leod Cameron. | Alfred Henry Inman.

Fellowship, Scholarships, Bursaries, Prizes, &c., in Science.

I.—FELLOWSHIP, &c.

THE FALCONER MEMORIAL FELLOWSHIP.

This Fellowship was founded in 1869 by the Subscribers to the Fund for a Memorial to Hugh Falconer, M.D., (for many years Superintendent of the H. E. I. Company's Botanic Gardens at Suharunpoor and Calcutta), and the Association for the better Endowment of the University of Edinburgh. It is of the annual value of £111, 0s. 4d.; and is for the encouragement of the Study of Palæontology and Geology. It is tenable for two years, but if the Senatus see fit, it may be held for three years, and with consent of the University Court, for four years, and is awarded after competitive examination in Natural History as applied to Palæontology and Geology. It is open to Graduates in Science or Medicine of this University of not more than three years' standing at the time of the competition. It cannot be held along with any other Fellowship, Scholarship, or Bursary in any Scottish University. The Deed of Foundation will be found at p. 270 of the CALENDAR for 1870-71. The next appointment may be made in July 1891.

1885. Geo. C. Purvis, M.B., C.M. | 1888. *Malcolm Laurie, B.Sc.*

THE WILLIAM DICKSON TRAVELLING FUND.

This is a fund for the purpose of assisting Graduates of any Faculty, of not more than three years' standing, to travel for the purpose of study or research. For particulars, see p. 228.

II.—SCHOLARSHIPS.

I.—BAXTER PHYSICAL SCIENCE SCHOLARSHIP.

This Scholarship was founded by Sir David Baxter, Bart., of Kilmaron, in 1865, and is of the annual value of £71, 7s. 10d., tenable for two years. By the terms of the Deed of Foundation (given in the CALENDAR for 1866-7, p. 203), it is awarded to the most eminent of the Bachelors in Science, who have passed their examinations in the Physical Sciences, including Experimental Philosophy and Chemistry, either in the year preceding a vacancy, or in the year in which a vacancy occurs. Amongst other conditions the second year's tenure of this Scholarship is subject to the condition that the holder shall have taken the Degree of Doctor in Science in the first year of his tenure of it. It cannot be held with any other Scholarship, Fellowship, or Bursary, or with any situation yielding an annual income of £100.

1885. James Walker, B.Sc.
1887. Thos. B. Marshall, B.Sc. | 1890. *Thos. Smith Murray, B.Sc.*

II.—BAXTER NATURAL SCIENCE SCHOLARSHIP.

This Scholarship was founded by Sir David Baxter, Bart., of Kilmaron, in 1865, and is of the annual value of £71, 7s. 10d., tenable for two years. By the terms of the Deed of Foundation (given in the CALENDAR for 1866-67, p. 203), it is awarded to the most eminent of the Bachelors in Science, who have passed their examinations in the Department of the Natural Sciences, including Botany, Zoology, Physiology, and Geology, either in the year preceding a vacancy or in the year in which a vacancy occurs. Amongst other conditions the second year's tenure of this Scholarship is subject to the condition that the holder shall have taken the Degree of Doctor in Science in the first year of his tenure of it. It cannot be held with any other Scholarship, Fellowship, or Bursary, or with any situation yielding an annual income of £100.

1888. G. F. Scott-Elliot, B.Sc.
1890. *Robert Murray Leslie, M.A., B.Sc.*

III.-VIII.—VANS DUNLOP SCHOLARSHIPS.

These Scholarships may be held by Science Students. They are each of the annual value of £100, and are tenable for three years, on condition that the scholar submits annually—(1.) A certificate of attendance on lectures or laboratories approved by the Senatus; or (2) a certificate of having acted as an assistant to a Professor in this or some other University; or (3) a written report of his work done during the year, together with a Thesis composed by himself in connection with some part of that work.

III.—MATHEMATICS.[1]

The next Competition will take place in April 1892.

IV.—NATURAL PHILOSOPHY.[1]

The next Competition will take place in April 1892.

V.—AGRICULTURE AND RURAL ECONOMY.[1]

The next Competition will take place in March 1892.

VI.—CHEMISTRY AND CHEMICAL PHARMACY.[2]

The next Competition will take place in April 1891.

VII.—NATURAL HISTORY, INCLUDING GEOLOGY AND BOTANY.[2]

The next Competition will take place in April 1892.

VIII.—ENGINEERING AND MECHANICAL AND USEFUL ARTS.[1]

The next Competition will take place in March 1891.

[1] For particulars, see "Scholarships" in Faculty of Arts.
[2] For particulars, see "Scholarships" in Faculty of Medicine.

IX.—STEVEN SCHOLARSHIP.[1]

Is awarded annually in March.

X.—HOPE PRIZE SCHOLARSHIP.[2]

Is awarded annually in March.

XI., XII.—THE MACKAY SMITH SCHOLARSHIPS.

These Scholarships were at first intended to have been held in Edinburgh and Glasgow Universities alternately, and were so held in Edinburgh for the Sessions 1883-84 and 1884-85, and in Glasgow for the Sessions 1885-86 and 1886-87. It was, however, afterwards arranged, instead of the Scholarships alternating between the two Universities, that the proceeds of the present investment should be divided—one half being retained by the Senatus of the University of Edinburgh, and the other half transferred to the Senate of the University of Glasgow, so that each University now acts independently. The portion of the proceeds at present falling to Edinburgh is £50 annually, which provides one Scholarship in Natural Philosophy and one in Chemistry, each of the annual value of £25, tenable for two years, and to be held under such regulations and conditions as the Senatus may from time to time direct. The Scholarship in Natural Philosophy is open for competition to Students who have attended the Class of Natural Philosophy, and the Scholarship in Chemistry to Students who have attended the Class of Chemistry, both in this University. The successful Candidate for the Scholarship in Natural Philosophy is bound to attend the Class of Natural Philosophy, or to prosecute the study thereof, in the University during at least one year of his tenure of the Scholarship, in such way as the Senatus may direct or approve; and the Scholarship in Chemistry is held under similar conditions as regards attendance on the Class of Chemistry, or the prosecution of the study thereof. The next Competition for these Scholarships will take place at the end of the Winter Session 1891-92.

1883.	G. N. Stewart (Nat. Phil.) H. R. Mill, B.Sc. (Chem.)	1888.	Martin H. Foye (Chem.) A. W. Duff, M.A. (Nat. Ph.)
1884.	C. H. Stewart, B.Sc. (Chem.)	1889.	J. F. M'Kean, M.A. (lapsed Nat. Phil.)
1887.	D. B. Mair (Nat. Phil.) J. Crocket (Nat. Phil.) H. Marshall (Chem.) equal.	1890.	*R. W. Briggs* (Chem.) *James Holm* (Nat. Phil.)

Of the foregoing Fellowship, Scholarships, Bursaries, and Prizes, the following are open during the Summer Session 1890 and Winter Session 1890-91.

I.—*The William Dickson Travelling Fund for Research* (p. 533).

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[1] For particulars, see "Scholarships" in Faculty of Arts.
[2] For particulars, see "Scholarships" in Faculty of Medicine.

II.—SCHOLARSHIPS.

1. *The Vans Dunlop Scholarship in Chemistry and Chemical Pharmacy* (No. VI., p. 534).

2. *The Vans Dunlop Scholarship in Engineering and Mechanical and Useful Arts.* The Examination is similar to that for the Second B.Sc. for the degree in Engineering, with the addition of questions on one or other of following groups of books at the option of the Candidate:—(1) Mosley's "Mechanics of Engineering;" Tredgold's "Carpentry" (revised by Taru). (2) Fairbairn, "Mills and Millwork"; Silvanus Thompson's "Dynamo," "Electric Machinery." The conditions of tenure may be altered before the next election. The Examinations will take place as follows:—Natural Philosophy and Dynamics, on 11th April 1891, at 9 A.M. and 1 P.M.; on Engineering and Drawing, on 6th, 7th, 8th, and 9th April 1891, at 11 A.M. and 1 P.M. each day. Candidates are required to give in their names, with a statement of their University standing, to the Clerk to the Senatus one month before the date of the examination, and, at the same time, to state on which the two foregoing groups of books they elect to be examined.

3. The *Steven Scholarship in Agriculture* (No. IX., p. 535).

4. The *Hope Prize Scholarship in Chemistry* (No. X., p. 535).

III.—BURSARIES.[1]

1-7. *Seven Heriot Bursaries*, each of the annual value of £30, and tenable for three years, are open to students matriculating for the first time in the University. Applications to be sent, not later than 1st October in each year, to the Governors of George Heriot's Trust, from whom all relative information may be had on application.

8. *Renton Bursary.* The examination is in English and Elementary Mathematics, and will take place on Saturday, November 8, at 10 o'clock. Names of Candidates to be entered at the Secretary's Office, on or before 4th November.

PRIZES.[2]

1. *The Hope Chemistry Prize.* The next award will be made in July 1889. Names to be given in to the Professor of Chemistry on or before 20th June 1891.

2, 3. *Two Gunning Victoria Jubilee Prizes, one in Botany and one in Physiology.* Competitive Essays to be lodged with the Dean of the Faculty of Medicine on or before 30th April 1891.

4. *The Anderson Henry Prize in Botany.* Subject—"The relations of Plants to their supply of Water, and the effects of these relations upon the Surroundings of the Plants." Competing Essays to be sent to the Dean of the Faculty of Medicine on or before 1st July 1890.

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[1] For further particulars, see "Bursaries" in Faculty of Arts.

[2] For further particulars see "Prizes" in Faculty of Medicine.

Deeds of New Foundations, etc.

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STEVEN LECTURESHIP IN AGRICULTURE.

I, MISS ELIZABETH STEVEN, of Bellahouston, in the County of Lanark, having resolved to found and endow a Lectureship in connection with the Chair of Agriculture in the University of Edinburgh, for the advancement of the Science of Agriculture, in connection with which my sister, the late Miss Grace Steven, and I formerly endowed a Scholarship in memory of our brother, the late Moses Steven, Esquire, of Bellahouston aforesaid, who took an interest in the Science of Agriculture, and who died at Edinburgh on the 27th day of July 1871; and I, the said Elizabeth Steven, having paid over the sum of £3000 sterling to the University of Edinburgh for the endowment of the said Lectureship, do hereby mortify the said sum of £3000 sterling to and in favour of the said University of Edinburgh and of the University Court of the said University, incorporated under the Universities (Scotland) Act, 1889, and their successors in office, for the Foundation and Endowment of a Lectureship to bear the name of the "Steven Lectureship," in connection with the Chair of Agriculture in the said University; and I hereby direct and appoint that the said Lectureship shall be in the gift and appointment of an electing body, consisting of the Principal of the said University, the Professor of Agriculture in the said University, both for the time being, and three representative members of the University Court of the said University for the time being, such three representative members being appointed by the said University Court; which electing body (the majority being a quorum) shall be the Patrons of the said Lectureship; and the said Lectureship shall be held and be subject to the conditions and regulations following, viz.:—*First*, The income of the said Lectureship shall consist of the free annual income of the said mortified fund, that is, the income for one year after deduction of all necessary expenses attending the management of said fund, as fixed by said electing body or their quorum; and the said Lectureship shall be held by each Lecturer for a period of three consecutive years, and each Lecturer shall be eligible for re-election. *Second*, The first appointment of a Lecturer to the said Lectureship shall take place at or before 31st December next, and each Lecturer on being appointed shall lecture to the students attending the class of Agriculture in the University of Edinburgh, and to such

other parties as may be allowed to attend the Lectures, on such subjects as shall have been prescribed by the electing body before the election ; or, if the subjects have not been so prescribed on his appointment, then the Lecturer, after consultation with the Professor of Agriculture in the said University for the time being, shall indicate the subjects on which he proposes to lecture during each of the three years of his tenure of office, and these subjects shall be submitted to the electing body for their approval, and must be approved of by them before the Lectures are delivered. *Third*, The University Court of the said University, with due regard to the power of the Senatus Academicus to regulate and superintend the teaching and discipline of the University, and after communicating with the Professor of Agriculture in the said University for the time being, shall have power to regulate and determine the period of lecturing, the number of lectures, the fees to be charged (students attending or who have attended the Class of Agriculture in the said University being always admitted to said lectures free of charge), and all other details connected with the said Lectureship,—the University Court keeping always in view, as my intention in founding the said Lectureship, the benefit of those engaged in agricultural and pastoral pursuits in Scotland. And, *Lastly*, I hereby declare that the said University Court and their successors in office shall have full power to lay out and invest, and also to reinvest from time to time, the said mortified fund on any of the securities or investments allowed by law for trust funds in Scotland : declaring that the said University Court and their successors in office shall be in no way liable for the sufficiency or insufficiency of the securities or investments on which the said mortified fund or any part thereof may at any time be invested. And I consent to registration hereof for preservation.—In witness whereof, &c. Dated 22nd February 1890.

COBB DIVINITY SCHOLARSHIP.

I direct my said Trustees to pay out of my means and estate and yearly income, and produce arising therefrom, at the first term of Whitsunday or Martinmas making six months after my death, the following Legacies and Bequests to the parties and institutions afternamed, free of Legacy duty and every other claim whatever, viz. : . . . To the University of Edinburgh, to be applied as directed by a separate Deed of Directions, signed by me of even date herewith, the sum of £1000 sterling. . . .

Deed of Directions.

I, Miss Matilda Johnston Cobb, residing in Broughty Ferry, considering that of even date with these presents, I have executed a Trust Disposition and Settlement whereby I have conveyed my means and estate to George Burnet, Merchant in Dundee, and residing in Broughty

Ferry; Daniel Walker, Assistant Inspector of Factories in Dundee, and residing in Broughty Ferry; John Charles Bell, Auctioneer, Dundee, and residing in Broughty Ferry; and David Cobb, residing in Broughty Ferry, my brother, as Trustees for the purposes therein mentioned; and whereas by said Trust Disposition and Settlement I have *inter alia* directed my said Trustees to pay over the sum of One thousand Pounds sterling to the University in Edinburgh, to be applied as directed by a separate Deed of Directions signed by me of even date therewith; and whereas it is right and proper that I should execute said Deed of Directions, therefore I direct my said Trustees to pay over the said sum of One thousand Pounds to the Principal and whole other Members of the Senatus Academicus of the University of Edinburgh, to be held by them and their successors in office for behoof of said University, for the foundation and endowment of a Scholarship in said University, under the following conditions, viz.: *First*, The said Scholarship shall bear the name of the "Cobb Divinity Scholarship" in memory of me. *Second*, The patronage of the said "Cobb Divinity Scholarship" shall belong to the said Senatus Academicus, and shall be exercised by them for the encouragement of the study of Theology, subject to the conditions herein contained. *Third*, The Scholarship shall be awarded by competitive examinations in Hebrew, Greek, Latin, and Mathematics, and only young men entering the Divinity Hall for the first year shall be allowed to compete, and the examination shall be conducted as hereinafter directed. *Fourth*, On each occasion of a vacancy, the Scholarship shall be open for competition to all young men who have entered or intend entering the Divinity Hall of said University for the first year with a view to becoming clergymen of the Church of Scotland as by law established. *Fifth*, The Scholarship shall be tenable for three years only. *Sixth*, The competitive examination shall take place at such time and in such place as the Principal and other members of the Senatus Academicus for the time being may fix. *Seventh*, The examiners shall be appointed by the Principal and other members of the Senatus Academicus, and they shall report their opinion of the result of the examination to the Senatus Academicus, who shall, as patrons of the said Scholarship, appoint thereto the candidate who appears by the Report to be best qualified by proficiency in the subjects of the said Examination. But if the said examiners be equally divided in opinion, or shall report that two or more of the candidates have an equal claim to the Scholarship, the Senatus shall take such farther measures as they may think proper for deciding as to the relative proficiency of such candidates. Each holder of the said Scholarship shall, during his tenure thereof, be entitled to receive the free annual proceeds of the said sum of One thousand Pounds sterling, after deducting all reasonable expenses, and the said free annual proceeds shall be payable half-yearly at the terms of Whitsunday and Martinmas in each year, and the interest due on said principal sum at the first term of Whitsunday or Martinmas, making six months from the date when said principal sum shall be paid over, shall be the first

term's interest available for payment to the first holder of the Scholarship. *Ninth*, If at any time from and after the first term's payment of said interest the said Scholarship shall be vacant, the interest or proceeds for the period of the vacancy shall be added to the capital, and the interest accruing upon any such addition to the capital shall be payable to the persons thereafter appointed to the Scholarship. *Tenth*, It shall not be competent for any person to hold the said Scholarship along with any Divinity Fellowship or other Scholarship or Bursary in any University, and the tenure of any person appointed to the said Scholarship shall terminate on his obtaining and accepting any such other Fellowship, Scholarship, or Bursary, and it shall then be in the power of the said Senatus Academicus to make a new appointment. *Eleventh*, In case of what the said Senatus Academicus shall consider misconduct on the part of any holder of the Scholarship, or of the holder of the Scholarship abandoning the said Divinity Hall, or any other circumstance which would defeat the object of the Scholarship, they shall have power to suspend the said holder from, or to deprive him of, the Scholarship, subject to an appeal to the University Court, if taken within eight days; but in the meantime, the decision of the said Senatus Academicus shall receive effect from its date. *Twelfth*, On each occasion when the said Scholarship shall be competed for, the said Senatus Academicus shall give at least six months previous public notice of the competition; but in case of a vacancy occurring from death, resignation, or otherwise, at such a period of the year as to prevent the Senatus Academicus from giving at least six months' notice of the next competition, the said Senatus Academicus shall, in that case, give such shorter notice of the competition as to them shall seem proper. *Thirteenth*, The Faculty of Theology of the said University shall have power, subject to the approval of the University Court, to make such conditions and regulations for the Scholarship as they shall from time to time think fit, provided always that such conditions and regulations shall tend the better to carry out the main design I have in view, as shown by these presents. *Fourteenth*, The said Senatus Academicus shall have power to lay out and invest the said principal sum of One thousand Pounds, and all accumulations of interest thereon, on good Heritable Securities, or in the purchase of well-secured Feu-Duties, or of Debentures of well-established Railway Companies, or in the purchase of Government Stock, or in such other Security as they may deem expedient in accordance with the rules for the time being regarding the investment of such funds; and the said Senatus Academicus shall not be responsible for the sufficiency of the Security or Securities on which the said sum and additions thereto are invested in the due exercise of the powers hereby conferred. And I consent to the registration hereof for preservation and execution.—In witness whereof, &c. Dated 3rd October 1887; Registered 17th August 1889.

MACKIE BURSARIES.

I, JAMES MACKIE, Physician in Greenock, considering that I have, of this date, executed a Trust Disposition and Settlement, regulating the disposal of my means after my death, in favour of Arthur Oughterson Leitch, Merchant; Alexander Currie, Sugar Refiner; and William Stewart Anderson, Wine Merchant, all in Greenock, as Trustees, for the purposes therein mentioned, and, by the fifth article thereof, I have made the following provision :—"Whereas I am desirous to make provision for assisting two young men who may require such assistance, studying my profession of medicine or surgery in the University from which I obtained my degree, for limited periods during the curriculum of their studies, and, for that purpose, to found two Bursaries: Therefore, in like manner as is provided in the preceding article, out of the fund or sum so laid aside to secure the annuity of the said Miss Emily Vaux Jenny, my Trustees shall, at the first term of Whitsunday or Martinmas that shall occur after her death, or as soon thereafter as the said sum or fund can be conveniently got in and realised, make payment to the Professors, for the time being, of the Medical Faculty in the University of Edinburgh (including in the number as well Professors appointed by the Crown as those appointed by the Senatus Academicus of the said University, and by the Town Council of Edinburgh, but excluding Professors appointed by any other authority, and private teachers), which Professors, so hereby designated as Trustees, are hereinafter styled the Bursary Trustees, of the sum of £2000, to be held by them in trust in perpetuity, and laid out and invested for providing and securing two Bursaries in the said University, to be called the 'Mackie Bursaries,' all in terms of a codicil and deed of foundation, which, for purposes of convenience, has been separately prepared, and is to be executed by me of equal date herewith, and to which reference is here made: declaring that if the said Miss Emily Vaux Jenny shall predecease me, and thereby render inoperative the provisions for laying aside a fund to secure her annuity, then the said sum of £2000 shall be paid to the said Bursary Trustees, out of the residue of my estate, at the first term of Whitsunday or Martinmas that shall occur after the expiry of six months after my death, and, in these terms, I legate and bequeath said sum accordingly": And now, seeing that, with the view of enabling the Bursary Trustees the more easily and effectually to carry out my intentions in regard to the said Bursaries, I have resolved to execute this codicil and deed of foundation in manner underwritten: Therefore, and without prejudice to the provision in my Trust Disposition and Settlement before recited, but in corroboration and supplement thereof, I, of new, direct my trustees nominated in my said Trust Disposition and Settlement, at the term or time therein provided, to make payment to the said Professors, for the time being, of the Medical Faculty in the University of Edinburgh, including and excluding as before written, and herein styled the Bursary Trustees, of the sum of

£2000, to be held by them in trust in perpetuity, and laid out and invested for providing and securing two Bursaries in the said University, to be called "The Mackie Bursaries," and the Bursary Trustees shall, annually, make payment of the interest or annual proceeds of the said sum of £2000, equally to and between two young men attending the medical or surgical classes, or any of such classes, in the said University, during the winter sessions of the University, such payment to be made on the 30th day of November in each year, or as soon thereafter as conveniently may be, and to continue during two years to each Bursar so prosecuting his studies, and, on the expiration of each such period of two years, in so far as concerns each Bursar, or on such Bursar ceasing before that period to be entitled to the benefit of his Bursary, in the terms after written, the recipients of the said Bursaries to be changed, and others chosen in their place; and the said Bursary Trustees shall, at a meeting to be held on or about the 1st day of November, in the first year after the fund shall come into their hands, and thereafter on the 1st day of November in any year after a vacancy has occurred, or as near to that day as conveniently may be, by open vote, choose and elect as Bursars such students of medicine or surgery, at which meeting the Professor of the Practice of Medicine, for the time being, if present, shall be chairman, and, failing his being present, then the chairman shall be elected by the meeting, and the election shall be by the Bursary Trustees personally present at such meeting, or a majority of their number, the chairman, in case of equality of votes, having a casting vote: Declaring that the persons to be chosen as Bursars may be natives of any country, and the sole qualification to be required from them shall be that they are to attend the medical and surgical classes, or any of them, in the said University, during the winter sessions, for the period of two years, and that they are persons of good character, and requiring such assistance, all of which requisites shall be set forth *in terminis* in the Minute of Election, provided always that, in case any Bursar so elected shall fail to attend such classes for the full period, he shall be bound, if required by the Bursary Trustees, to repeat and pay back any sums he may have received under the provisions now made, the sums so repaid, if any, to be added to the principal fund payable from my estate, and to form an integral part of the same: But providing that the Bursary Trustees shall have a discretionary power whether to require such repetition and repayment or not, as the circumstances of each case may or may not, in their discretion, form a satisfactory excuse for such failure; and, upon the expiry of each full period, or on the failure on the part of a Bursar to attend his class or classes as ascertained, in the terms after written, a new election shall take place, and so forth *toties quoties:* Declaring that such failure shall be held to have taken place, and to be ascertained, and the right to the Bursary to have lapsed, in case the Bursar elected shall fail to report his personal presence, and his intention to prosecute his studies to the Secretary, or other proper Officer of the University, on or before the 1st day of November of the

first year of his election, or of the following year; and, on the election of each Bursar, he shall be bound to subscribe a declaration, upon his honour, of his intention to continue to attend medical and surgical classes in the said University, for the winter sessions, during the full period of two years, and, failing such attendance, to repeat and pay back, if required, in terms of the before-written provisions, with power to the Bursary Trustees to make any regulations or bye-laws they may consider necessary for effectually carrying out the purposes of the Trust: And declaring that, in case, for any reason, the whole of the persons hereby designated as Bursary Trustees shall be unable, or shall fail to accept and act as Trustees, then it shall be in the power of the Secretary to the said University, or of any of the Professors in the other Faculties of the same, whom all failing, of the Lord Advocate for the time being, to apply, by a Summary Petition to the Court of Session, for the appointment of any person or persons as Bursary Trustee or Trustees, for the purposes and with the powers herein conferred upon the Professors designated for that purpose, which appointment it shall be competent for the Court thereupon to make; and, as my intention is to afford aid to young men struggling with the *res angusta domi*, I express a particular desire that the Bursary Trustees will keep this in view in electing the Bursars; with power to the Bursary Trustees to purchase and hold Heritable Property or Government Stocks, or to lend out any Trust Funds in their hands on Heritable Security, or on the security of any Joint Stock or other Company, such as Railway, Gas, and Water Companies, or of any Public Trust or Corporation, and from time to time to call in and realise the sums invested, and of new to invest the same; specially declaring that they shall not be responsible for any loss that may arise in the course of such operations: Further, declaring that it shall not be held, from the provision for said Bursaries being included both in said Trust Disposition and Settlement and herein, that any double provision is intended by me, but only one free sum of £2000 shall be applied for said purpose, this deed being intended in supplement of said Trust Disposition and Settlement, and to aid in carrying out the Trust objects; and I consent to registration hereof, along with my said Trust Disposition and Settlement, for preservation.—In witness whereof, &c. JAMES MACKIE.

Dated 7th April 1869.

REGULATIONS APPROVED BY SENATUS, 25TH MAY 1888.

1. One of the two Bursaries shall be given to a Student of Medicine who has completed his first *annus medicus* of study, and the second to a Student who has completed his second *annus medicus* of study; provided that any Student nominated as a Bursar subscribe a declaration upon his honour that it is his intention to continue to attend Medical and Surgical Classes in the University of Edinburgh during at least the full period of two years.

2. Each Bursary may be held for two years on the conditions that the Bursar continue to attend Medical and Surgical Classes in the Curriculum for Graduation in this University, that he pursue his studies with diligence, and that he report his personal presence and his intention to prosecute his studies to the Dean of the Faculty of Medicine within one week after the commencement of each Session, during which he is entitled to hold the Bursary.

3. In appointing Bursars, the Faculty shall take such measures as they may consider expedient to ascertain, in terms of Dr Mackie's settlement, that the Bursars are persons of good character and requiring pecuniary assistance.

MACLAURIN BURSARY.

To the University of Edinburgh the sum of Two thousand Pounds, to be applied in the foundation and endowment of a Bursary in the said University, to be called the "Maclaurin Bursary," the same to be only for Students of the founder's name of Maclaurin (or in Gaelic orthography, "Maclathrin"), tenable by each Bursar for the term of four years, and to be in the patronage of the Town Council of Edinburgh; and in case in any year or years the said Bursary be vacant, the sum or sums that would have been paid for such year or years, had it been filled, shall be added to the capital of the endowment.

REGULATIONS FOR THE MANN BURSARIES.

1. Candidates must be children of residents in the town of Nairn. This requirement will be held to have been complied with when one or both the parents of a Candidate have resided within the municipal boundaries of Nairn for at least twelve months at any period prior to the competition.

2. Candidates must lodge their applications, at least three weeks before the Annual Bursary Examination of the University, with the Secretary of the Senatus, along with evidence as to the residence required by Rule 1.

3. One of these Bursaries shall be awarded annually to that Candidate, matriculating for the first time in the University of Edinburgh, who obtains the highest marks at the Entrance Bursary Examination in English, Latin, Greek, and Mathematics, provided the Examiners be satisfied with the standard he has attained.

4. Each of the three Bursaries shall be tenable for three years, the annual payment being in each case one-third of the revenue of the Mann Fund of £2000, less the expenses of administration.

5. Failing Candidates of the first year, the vacant Bursary shall be awarded as an Arts Bursary of the second year to the Candidate, qualified under Rule 1, who obtains the highest marks in the Bursary Examination for the second year; and, failing Candidates of the first

and second years, the vacant Bursary shall similarly be awarded as an Arts Bursary of the third year : provided always that such Candidate be deemed worthy of the Bursary. When the Bursary is awarded under this Rule it shall be tenable for one year only.

6. Failing Candidates qualified under Rule 3 or Rule 5, the Senatus may continue one of the Bursaries to its holder for a fourth year, provided he be a Student of merit who proposes to continue his studies for a fourth year in some special subject.

7. Each Mann Bursar must be *bona fide* engaged in studying for a Degree in Arts or in Science, and must produce evidence at the end of each Winter Session during which he has held his Bursary that he has attended at least two classes in the Faculty of Arts, or in one of the Departments of Science, and has made reasonable progress in his studies therein.

8. Any breach of the above regulations on the part of a Mann Bursar, or any conduct unworthy of a scholar and a gentleman, will be punished by forfeiture of the Bursary.

15th January 1887.

LOCKERBY BURSARY.

My said Trustees shall, as soon as convenient after my decease, invest in such security as they may consider advisable, the sum of One thousand Pounds sterling, in order to provide for a Bursary, to be called the "Lockerby Bursary," and which shall be exclusively for Divinity Students attending the University of Edinburgh, and they shall apply the annual proceeds of the said sum of One thousand Pounds in assisting deserving Students who desire to become Ministers of the Church of Scotland only. Dated 22nd August 1883.

Benefactors of the University.

THE Revenues of the University were formerly scanty and very inadequate for the encouragement of the higher education and learning in the Scottish metropolis. Scholarships and Fellowships were unknown prior to those recently instituted, and the emoluments of several of the Chairs are still greatly inferior to those in many other Universities.

During the early period of its history, the University received a considerable number of small donations and bequests, chiefly for Bursaries. Notices of these will be found in the preceding pages, in the Histories of the University by Bower, Dalzel, and Grant, and in the Report of the Universities' Commissioners in 1830. A list of early Benefactors to the Library is given at p. 27.

By Act 1 & 2 Vict., cap. 55, the various sums of money mortified in the hands of the Town Council for the support of the University, amounting to £13,119, were discharged, and an annual payment of £2500 (since reduced to £2170), secured upon the revenues of Leith Docks, is assigned to the University for the purposes of these bequests.

Within the present century, but especially since the year 1860, many donations and bequests have been made for Bursaries, Scholarships, and Fellowships, for the endowment of Chairs, and particularly for the New Buildings, which will shortly be completed by the erection of the spacious "M'Ewan Hall." As the University, however, is still in many respects very inadequately endowed, much still requires to be done in order that it may not fall behind the requirements of the age. It is therefore hoped that the generosity of future donors will remedy this defect, and be directed towards the improvement of the Library, the augmentation of the General Fund, and various other

academical purposes. Intending Benefactors are respectfully reminded that additional Chairs, Lectureships, Supplementary Endowments for existing Chairs and Lectureships, Scholarships for many branches of scientific research, and contributions to the University Fund for general purposes, besides ordinary Bursaries and Prizes, are still urgently required. The wishes of Donors and Testators are in every case scrupulously observed, and their names, if so desired, may always be connected with any Chair, Lectureship, Scholarship, Bursary Fund, or other Benefaction which they may bestow. Such Benefactions may simply be conveyed to the "University of Edinburgh." All necessary information will be gladly afforded by the principal Office-bearers of the University. The following list includes the chief Benefactors of the present century, together with the purposes of their benefactions.[1] :—

(A.)—*Founders of Bursaries in the present Century.*

Rev. J. STEWART, South Carolina—Founder of the Stewart Bursaries.

Sir JOHN M'PHERSON, late Governor-General of India—Founder of the M'Pherson Bursary.

Rev. R. BLAIR, D.D.—Founder of the Blair Bursaries in Arts and Theology,

J. STEWART HEPBURN, Esq. of Colquhalzie—Founder of three Theological Bursaries.

JOHN JAMIESON, Esq., Edinburgh—Founder of the Jamieson Bursary.

GEORGE PARKER BIDDER, Esq.—Founder of the Jardine Bursary.

WILLIAM LENNIE, Esq., Teacher, Edinburgh—Founder of the Lennie Bursaries.

JOHN BRUCE, Esq., Trinity Crescent, Edinburgh—Founder of the Bruce Bursaries.

M'DIARMID TESTIMONIAL TRUSTEES—Founders of the M'Diarmid Bursary.

W. PATRICK, Esq. of Roughwood—Founder of the Patrick Bursaries.

[1] An Association exists for the purpose of promoting—1st, The Foundation of Scholarships and Fellowships for the encouragement of the higher learning among the more advanced Students; 2d, The better Endowment of existing Chairs; 3d, The Foundation of new Professorships; and 4th, Other University objects.

The Chancellor of the University is President of this Association; the Hon. Secretary is Archd. Campbell Swinton, Esq.; and the Acting Secretary is John Christison, Esq., W.S., 40 Moray Place, Edinburgh.

James Gray, Esq. of Baadpark—Founder of the Gray Bursaries.

Edinburgh Caithness Association—Founders of a Bursary.

Edinburgh Galloway Association—Founders of a Bursary.

Ayrshire Club—Founders of two Bursaries.

Peebles-shire Society—Founders of a Bursary.

Dr Abercrombie, Cape Town—Founder of a Bursary.

Mrs Margt. Tyndall Bruce of Falkland—Founder of three Bursaries.

Trustees of Francis J. Scott, Esq. of Mount Lodge, Portobello—Founders of two Bursaries.

Miss Hannah Harrison of Lasswade—Founder of a Bursary.

Miss Mary Ettles of Inverness—Founder of three Bursaries, and the "Ettles Medical Scholarship."

Trustees of the Rev. John Spence, Minister of Kinnaird—Founders of two Bursaries.

John Robertson Sibbald, M.D.—Founder of Five Bursaries.

Argyllshire, Bute, and Western Isles Associations—Founders of a Bursary.

Subscribers to Memorial to Robert Stewart, Esq. of Ardvoirlich—Founders of a Bursary.

The Edinburgh Border Counties Association—Founders of two Bursaries.

The Right Hon. Thomas, Earl of Zetland—Founder of the Orkney and Zetland Bursary.

Trustees of James Grierson, of Ogscastle—Founders of the Grierson Bursaries.

Trustees of Dr Mackie, Leith—Founders of Mackie Bursaries.

Trustees of J. Cairns, Esq., W.S. — Founder of the Cairns Bursary.

Trustees of Mrs Johnstone of Harthope, Moffat—Founders of the Johnstone of Harthope Bursary,

Trustees of James Lambert, Esq., Alloa—Founder of the Lambert Bursary.

Robert Marshall, Esq., Merchant, Edinburgh—Founder of the Marshall Bursary.

John Fothringham, Esq. of Heathpool—Founder of the Fothringham and Forrest Bursaries.

Right Hon. Lawrence, Earl of Zetland—Founder of the Zetland Bursaries.

ANDREW THOMSON, M.D.—Founder of Eight Bursaries in Arts, Divinity, Law, and Medicine.

EDINBURGH EAST LOTHIAN ASSOCIATION—Founders of a Bursary in Arts.

EDINBURGH UNIVERSITY ENDOWMENT ASSOCIATION—Founders of Six Bursaries in Arts.

Mrs ISABELLA WEBSTER—Founder of the Webster Bursaries in Divinity.

Dr JOHN AITKEN CARLYLE—Founder of two Bursaries in the Faculty of Medicine.

Mrs ELIZABETH MACKENZIE—Founder of the Mackenzie Bursaries.

Dr JOHN MUIR—Founder of a Classical Bursary.

TRUSTEES OF MRS BARBARA MACAULAY OR MYLNE—Founders of a Bursary in Divinity.

TRUSTEES OF REV. JOHN PATTERSON—Founders of a Bursary in Anglo-Saxon Grammar and Literature.

THOMAS CARLYLE—Founder of the John Welsh Bursaries in Mathematics and Classics.

Mrs HELEN ANDERSON or RONALD, Liverpool—Founder of the Anderson Bursaries.

SUBSCRIBERS to Testimonial to W. MACKINNON, Esq. of Balinakill —Founders of the Mackinnon Bursaries.

TRUSTEES of JAMES WHITELAW—Founders of Whitelaw Bursaries.

TRUSTEES of WILLIAM RENTON, Esq.—Founders of a Bursary in Divinity, and one in Arts.

Miss ISABELLA MACDOUGALL, Perth—Founder of the John and Isabella Macdougall Bursaries.

ROBERT HUNTER, Esq., Dalhousie Chesters—Founder of the two Bursaries in Divinity.

ROBERT PILLANS NEWTON of Castlandhill and Drumcross—Founder of the Newton Bursaries.

PETER CAMPBELL MANN of Seaham Harbour, Durham—Founder of a Bursary.

CHARLES JARDINE of Thorlieshope—Founder of Bursaries.

ISAAC ANDERSON HENRY—Founder of the Anderson Henry Prize.

Mrs H. E. MORISON—Founder of the Mackenzie (Stornoway) Bursary.

DANIEL MACLAURIN, Esq.—Founder of the Maclaurin Bursary.

THOMAS LOCKERBY, Esq.—Founder of the Lockerby Bursary.

(B.)—*Founders of Scholarships or Fellowships in the present Century.*

THE PITT CLUB—Founders of two Scholarships, one in Arts and one in Divinity.

JAMES MACKENZIE, Esq., W.S.—Founder of Mackenzie Scholarship.

ALEX. HENRY RHIND, Esq. of Sibster—Founder of the Rhind Scholarships and Bursaries.

Sir DAVID BAXTER, Bart., of Kilmaron—Founder of the Baxter Scholarships in Arts and Sciences.

Sir WILLIAM FETTES, Bart.—Founder of the Fettes Exhibitions.

JOHN MAXTON, Esq.—Founder of a Divinity Scholarship.

Miss ELIZABETH DRUMMOND—Founder of the Drummond Scholarship.

Mrs MARGARET TYNDALL BRUCE—Founder of three Scholarships.

JAMES GUTHRIE, Esq., of London—Founder of the Guthrie Fellowship.

SUBSCRIBERS to HAMILTON MEMORIAL FUND, and ASSOCIATION for the BETTER ENDOWMENT of the UNIVERSITY—Founders of a Philosophical Fellowship.

ASSOCIATION for the BETTER ENDOWMENT of the UNIVERSITY—Founders of a Classical Fellowship.

TRUSTEES of Dr J. H. GILCHRIST—Founders of three Scholarships for Natives of India.

JOHN ROBERTSON SIBBALD, M.D.—Founder of a Medical Scholarship.

Miss MARY BAXTER, of Balgavies—Founder of a Scholarship.

SUBSCRIBERS to FALCONER MEMORIAL FUND—Founders of a Fellowship.

SUBSCRIBERS to SYME FELLOWSHIP—Founders of a Fellowship in the Medical Faculty.

SUBSCRIBERS to GOODSIR MEMORIAL—Founders of a Prize and eventually a Fellowship in the Medical Faculty.

TRUSTEES OF Mrs CHARLES MACLAREN—Founders of the Charles Maclaren Scholarship.

SUBSCRIBERS to GLOVER MEMORIAL FUND, and ASSOCIATION for the BETTER ENDOWMENT of the UNIVERSITY—Founders of the "Glover Divinity Scholarship."

Mrs M. ARNOTT, Widow of NEIL ARNOTT, M.D.—Founder of the "Neil Arnott Scholarship for Experimental Physics."

JOHN EDWARD BAXTER, Esq. of Craigtay, bequeathed the residue of his estate, out of which three Scholarships named after him have been founded by the University Endowment Association.

The Rev. DAVID AITKEN, D.D., formerly Minister of Minto—Founder of the Aitken Scholarship.

DAVID SKIRVING, Esq., of 13 Westbourne Park, London—Founder of the Skirving Scholarship for Moral Philosophy.

ANDREW THOMSON, M.D.— Founder of a Scholarship.

THE EDINBURGH UNIVERSITY ENDOWMENT ASSOCIATION—Founders of a Fellowship in Law.

Misses KIDD of Woodhouse—Founders of the David Kidd Divinity Scholarship.

Dr R. H. GUNNING of Rio Janeiro—Founder of two Scholarships and a Fellowship in the Faculty of Divinity, and of eleven Prizes in the Faculty of Medicine.

Dr T. LECKIE—Founder of the Leckie-Mactier Scholarship.

SUBSCRIBERS TO MEMORIAL OF DR COLDSTREAM—Founders of the Coldstream Memorial Medical Missionary Scholarship.

Mrs JAMES BUCHANAN—Founder of a Scholarship in Midwifery and Gynecology.

Dr ANDREW VANS DUNLOP, H.E.I.C.—Founder of the Vans Dunlop Scholarships in Arts, Law, and Medicine.

Misses STEVEN of Bellahouston—Founders of a Scholarship in Agriculture.

SUBSCRIBERS TO MEMORIAL OF DR CHARLES MURCHISON—Founders of the "Charles Murchison Scholarship."

Mrs MARY ANN SCOTT or THOMSON of Hawick—Founder of the James Scott Scholarship in Midwifery.

ROBERT MACKAY-SMITH, Esq., Edinburgh—Founder of the Mackay-Smith Scholarships in Natural Philosophy and Chemistry.

Dr FREDERICK JOHN MOUAT—Founder of the Mouat Scholarship in the Practice of Physic.

Dr JOHN STARK, Auchtermuchty—Founder of the Stark Scholarship in Clinical Medicine.

Mrs KIDD—Founder of "James Fairbairn's Scholarship."

Miss JANE JEFFREY—Founder of the Jeffrey Scholarships.

Dr A. H. FREELAND BARBOUR—Founder of the Freeland Barbour Fellowship.

Miss MATILDA JOHNSTON COBB—Founder of the Cobb Divinity Scholarship.

(C.)—*Founders of New Chairs, Contributors of Endowments to existing Chairs, or of Money, &c., to the University Funds, Library, &c., within the present Century.*

General JOHN REID—Founder of the Theory of Music Chair, who also bequeathed money to the Funds of the University.

General Sir JOSEPH STRATON—Bequest to the University Funds.

Sir JAMES ERSKINE, of Torry, bequeathed Pictures, Bronzes, and Marbles to the University. [Lent to the National Gallery.]

Sir WILLIAM PULTENEY—Founder of the Chair of Agriculture.

Dr WILLIAM THOMSON—Founder of the Thomsonian Lectureship in Mineralogy.

Dr THOMAS CHARLES HOPE, late Professor of Chemistry—Founder of the Hope Prize.

Sir GEORGE BALLINGALL, late Professor of Military Surgery—Presented his Library to the University.

Dr W. P. ALISON, late Professor of the Theory of Medicine—Presented his Medical Books to the University.

JOHN MUIR, D.C.L., LL.D., Edinburgh—Founder of Sanskrit Chair.

Mrs MARGARET TYNDALL BRUCE—Founder of Prize in Logic Class.

DANIEL ELLIS, Esq.—Founder of "The Ellis Prize" in the Faculty of Medicine.

JOHN EDWARD BAXTER, Esq., of Craigtay, bequeathed the reversion of his Estate for the purpose of founding Scholarships, etc.

Sir DAVID BAXTER, Bart., of Kilmaron—Founder of the Chair of Engineering.

DAVID COWAN, Esq., of Auchendrane, bequeathed £1000 to the Association for Promoting the Endowment of the University.

Dr NEIL ARNOTT gave £1000 for Promoting the Study of Experimental Physics among the Medical Students of the University.

Sir RODERICK IMPEY MURCHISON gave £6000 for the Endowment of the Chair of Geology.

J. O. HALLIWELL PHILLIPPS, Esq., presented his valuable Shakespearean Collection to the University.

ROBERT COX, Esq., W.S., bequeathed £5000 for general purposes and for completing the Dome of the University buildings.

Signor THEOPHILE BUCHER bequeathed his Music Library to the Chair of Music, and reversion of estate to found Scholarships in Music.

THE MERCHANT COMPANY OF EDINBURGH, and other Governors of George Watson's and Daniel Stewart's Hospitals—Founders of the Chair of Political Economy and Commercial Law.

Mr HENRY G. and Miss FRANCES WATSON—Donors of Fund for the "Watson-Gordon Professorship of Fine Art." The Deed of Foundation will be found in CALENDAR for 1873-74, p. 320.

Sir D. BAXTER, of Kilmaron, bequeathed £20,000 for the Extension of the University buildings, and £20,000 for the Further Endowment of the Chairs in the Faculty of Arts.

Miss BROWN, of Lanfine, presented a portion of the Minerals and Fossils which belonged to her father—to be called "The Waterhaugh Collection."

Rev. HEW SCOTT of Wester Anstruther—Founder of the Scott and Dunbar Prize in Greek.

JOHN WILSON, Esq. of South Bantaskine—Founder of the Robert Wilson Prize in Chemistry.

Mrs E. WIGHTMAN—Founder of the Wightman Prize in Clinical Medicine.

THE BELL TRUSTEES, who gave £6000 for the Endowment of the Bell Chair of the Theory, History, and Practice of Education. (Endowment increased in 1886 by £4500, added by Educational Endowments Commission.)

JOHN B. BAILLIE, who transferred the collection of Arabic MSS., formed by Lieut.-Col. Baillie of Leys, to the University Library.

JAMES GEORGE BEANEY, Esq.—Founder of the Beaney Prize.

ANDREW ROBERTSON CAMERON, M.D., of Richmond, New South Wales—Founder of the Cameron Prize.

Dr DAVID LAING, bequeathed his MSS. to the University Library.

Mrs HODGSON, presented Works on Political Economy, collected by her late husband, Prof. Hodgson, to the University Library.

Dr VANS DUNLOP bequeathed £3000 to the General Fund of the University.

SUBSCRIBERS to the CELTIC CHAIR, by whom a fund of £14,000 was raised for the endowment of this Chair by the exertions of Professor Blackie.

Miss MARY DICK bequeathed a moiety of the residue of her estate to accumulate for twenty-one years from 1883, or till it shall amount to £10,000, for the Foundation of a Chair of Comparative or Surgical Anatomy, as considered most to be required.

SUBSCRIBERS of £500 and upwards to the "UNIVERSITY OF EDINBURGH BUILDINGS EXTENSION SCHEME":—[1]

The late Sir David Baxter of Kilmaron, Bart., by bequest, less Legacy Duty,	£18,000	0	0
William M'Ewan, Esq., M.P.,	6,500	0	0
The late Duke of Buccleuch and Queensbery, K.G., D.C.L., LL.D.,	4,000	0	0
The Magistrates and Council of the City of Edinburgh,	3,100	0	0
The Right Hon. the Earl of Moray,	2,525	0	0
The Right Hon. The Earl of Rosebery, LL.D.,	2,400	0	0
The Royal College of Physicians of Edinburgh,	1,575	0	0
The Right Hon. the Earl of Stair, K.T.,	1,500	0	0
Messrs John Jeffrey & Co.,	1,500	0	0
The late J. Fulton, Esq., Clinton Road.	1,150	0	0
Charles Andrew Aitchison, Esq., Queen Street,	1,050	0	0
The Most Hon. the Marquis of Bute,	1,000	0	0
Andrew Carnegie, Esq., New York and Pittsburg,	1,000	0	0
The Right Hon. the Earl of Derby,	1,000	0	0
J. R. Findlay, Esq., Rothesay Terrace,	1,000	0	0
The Right Hon. The Earl of Home,	1,000	0	0
The Right Hon. The Earl of Hopetoun,	1,000	0	0
The late Sir William Stirling-Maxwell of Pollok and Keir, Bart., LL.D., M.P.,	1,000	0	0
The Right Hon. The Earl of Wemyss and March, LL.D.,	1,000	0	0
The Right Hon. the Lord Justice-General, D.C.L., LL.D., Chancellor of the University,	800	0	0
Messrs Thomas Nelson & Sons,	800	0	0
The late Henry George Watson, Esq., C.A.,	800	0	0
The Most Hon. the Marquis of Lothian,	750	0	0
The Society of Writers to the Signet,	750	0	0
J. Lindsay Bennet, Esq., Taviton Street, London,	710	0	0
James Cowan, Esq., Royal Terrace,	700	0	0
Robert Richardson, Esq., Bruntsfield Place,	700	0	0
C. Morrison, Esq. of Islay,	700	0	0
C. Jenner, Esq.,	650	0	0
The late David Anderson, Esq., of Moredun,	600	0	0

[1] See Statement of Funds in Calendar, 1889-90, Appendix, p. 22.

James H. Renton, Esq., Park Lane, London,	£600	0	0
Professor Sir W. Turner, LL.D.,	600	0	0
The Most Hon. The Marquis of Hartington,	500	0	0
Charles Cowan, Esq., of Logan House,	500	0	0
T. R. Buchanan, Esq., M.P.,	500	0	0
P. D. Swan, Esq., Provost of Kirkcaldy,	500	0	0
Lady Campbell of Garscube,	500	0	0
The late William Cumming, Esq., M.D., Ainslie Place,	500	0	0
The late James T. Gibson-Craig, Esq., York Place,	500	0	0
Professor Crum Brown,	500	0	0
The Goldsmiths' Company of London,	500	0	0
W. Mackinnon, Esq., of Balinakill and Loup,	500	0	0
The late Graham Menzies, Esq. of Hallyburton,	500	0	0
John Graham Menzies, Esq., Grosvenor Crescent,	500	0	0
W. D. Menzies, Esq., Grosvenor Crescent,	500	0	0
The late Miss Trail, Aberlady, by bequest,†	500	0	0
Messrs William Younger & Co., Abbey Brewery,	500	0	0
The Right Hon. The Earl of Zetland,	500	0	0
Anonymous,	500	0	0

The total amount of subscriptions received was £149,048, 2s. 5d.

EARL OF ROSEBERY provided £50 a year for Lectureship on Philosophy of Natural History for five years.

WILLIAM F. CUMMING, M.D., presented a Drinking Fountain, erected in the Quadrangle of the Old Buildings, in 1886.

JOHN HOPE, W.S., presented a Drinking Fountain to the University New Buildings, 1886.

ALEX. GIBSON, Esq., Advocate, bequeathed £2000, free of legacy-duty, to the General Fund of the University.

WILLIAM M'EWAN, Esq., M.P., founder of the M'Ewan University Hall. *See* end of Appendix.

ADAM GIFFORD, Senator of the College of Justice, bequeathed £25,000 for the foundation of a Lectureship for promoting, advancing, teaching, and diffusing the study of Natural Theology in the widest sense of that term.

JOHN FULTON, Esq., bequeathed £3000 to General University Fund, the greater part of which has been devoted to the equipment of the new Engineering Laboratory, called the "Fulton Laboratory."

Bequests and Donations during 1889-90.

Bequests.

Bequest by the late Daniel Maclaurin, of London, of £2000, to found a Bursary in the Faculty of Arts.

Bequest by the late Miss Matilda Johnston Cobb, Broughty Ferry, to found a Scholarship in the Faculty of Divinity.

Bequest by the late Thomas Lockerby, formerly of Glasgow, and latterly of Derwent Villa, Addiscombe, Surrey, of £1000, to found a Bursary for "deserving Students who desire to become Students of the Church of Scotland only."

Donations.

Facsimile of the Will of James the Fifth, presented by the Marquis of Bute.

Rare and curious Hebrew MS. of the Torah, presented by Sir Charles Nicholson.

Collection of German works on Theology, presented by the Rev. Cunningham Geikie, of Norwich.

A learned work on the Koran, by Sir Syed Ahmed, of Aligarh.

An interesting legal treatise, by Professor Antonio Todaro, of Palermo.

A French translation of the late Professor Muirhead's "Roman Law," by M. Bourcart, of the University of Nancy.

A beautiful Chevreul Medal, presented by Mrs Wilson, of Tunbridge Wells.

Rotuli dei Lettori dello Studio Bolognese, by Dr Umberto Dallari, presented by the Italian Government.

Histoire de la Littérature Allemande, by the late Prof. G. A. Heinrich, LL.D., presented by Mme. Heinrich.

Annual Salaries, &c.

—o—

ANNUAL SALARIES (EXCLUSIVE OF CLASS FEES) ATTACHED TO THE OFFICE OF PRINCIPAL, AND TO THE PROFESSORSHIPS, ASSISTANTSHIPS, AND EXAMINERSHIPS IN THE UNIVERSITY, BY ORDINANCE OF UNIVERSITIES COMMISSIONERS AND SUBSEQUENT DEEDS OF FOUNDATION.

PRINCIPAL.

Salary (besides Official Residence), - £1000 0 0

FACULTY OF ARTS.

	Salaries of Professors.	Salaries of Assistants.	Allowances for Class Expenses
Humanity	£235 10 0	£100 0 0	.....
Mathematics	246 6 8	100 0 0	.....
Greek	235 4 4	100 0 0	.....
Logic and Metaphysics	298 4 4	.....	.....
Moral Philosophy	298 4 4	.....	.....
Natural Philosophy	266 4 4	100 0 0	£100 0 0
Rhetoric and English Literature	264 0 0	.....	.....
History	166 0 0	.....	.....
Practical Astronomy[1]	316 0 0	.....	.....
Agriculture	366 0 0	.....	.....
Music	436 0 0	200 0 0	100 0 0
Sanskrit	450 0 0	.....	.....
Engineering	400 0 0	.....	28 0 0
Geology	403 5 2	.....	37 8 8
Political Economy	466 0 0	.....	50 0 0
Class Prizes in do.,	- - -	- - -	24 0 0
Education	382 6 2	.....	.....
Fine Art	441 3 4	.....	40 8 2
Celtic Chair	549 19 2	.....	.....

FACULTY OF DIVINITY.

Divinity (present value)	£426 2 2	.....	.....
Hebrew	300 0 0	.....	.....
Church History	350 0 0	.....	.....
Biblical Criticism (present value)	630 0 0	.....	.....

[1] The Professor is also Astronomer Royal.

FACULTY OF LAW.

	Salaries of Professors.	Salaries of Assistants.	Allowances for Class Expenses
Public Law	£400 0 0	.....	.....
Civil Law	250 0 0	.....	.....
History	(See under Faculty of Arts.)		
Scots Law	100 0 0	.....	.....
Medical Jurisprudence	(See under Faculty of Medicine.)		
Conveyancing	105 0 0	.....	.....
Political Economy	(See under Faculty of Arts.)		

FACULTY OF MEDICINE.

Botany[1]	£200 0 0	.....	.....
Institutes of Medicine	150 0 0	.....	.....
Practice of Physic	100 0 0	.....	.....
Anatomy	.....	£150 0 0	£50 0 0
Chemistry	200 0 0	200 0 0	100 0 0
Midwifery	100 0 0	.....	.....
Natural History	195 15 $2\frac{2}{3}$	.....	.....
Materia Medica	100 0 0	25 0 0	50 0 0
Clinical Surgery	100 0 0	.....	.....
Medical Jurisprudence	100 0 0	25 0 0	35 0 0
Surgery	100 0 0	.....	.....
General Pathology	100 0 0	.....	.....

In addition to the permanent allowances for Assistants and Class Expenses entered above,—annual grants for the same purposes have for some time been made by the Senatus Academicus from the General University Fund. The amount for 1888-89 was :—

For Assistants,	£1,365 0 0
For Class Expenses,	214 0 0
	£1,579 0 0

ADDITIONAL EXAMINERS FOR DEGREES.

		Salaries.
In Arts	Classical Literature	£120 0 0
	Mental Philosophy	120 0 0
	Mathematics	120 0 0
	Schoolmaster's Diploma	3 3 0
In Medicine—13 Examiners at £75		975 0 0
In Divinity—2 Examiners, each £26, 5s.		52 10 0
In Law—2 Examiners, a share of Fees up to £26, 5s. each		52 10 0
In Science—one Examiner in Civil Engineering		3 3 0
In Agriculture—4 Examiners at £3, 3s. each		12 12 0

[1] This includes £100 formerly paid to the Regius Keeper of the Botanic Garden.

SUMMARY, INCLUDING ANNUAL GRANTS BY SENATUS.

	Salaries.
Principal - - - - - -	£1,000 0 0
Chairs in the Four Faculties - - - -	10,227 5 2
Assistants - - - - - -	2,363 15 0
Examiners in Arts, Medicine, Divinity and Law[1] -	1,458 18 0
Allowances for Class Expenses - -	802 16 10
	£15,852 15 0

STATEMENT SHOWING THE CAPITAL OF THE UNIVERSITY IN 1889, AND INCOME AND EXPENDITURE FOR THE YEAR 1888-89.

The University is maintained—1. By interest, &c., accruing from Capital Funds in charge of the Senatus Academicus; 2. by do. on a Fund in charge of the University Court; 3. by Annual Payments made from Crown and Parliamentary Grants, and from an annuity payable by Act of Parliament out of the Revenues of the Harbour and Docks of Leith; 4. by Matriculation, Graduation, and other Fees, paid annually; and 5. by annual payments by public bodies or private persons, and from Bursary Funds, of which neither principal nor interest is in the hands of the Senatus. The income derived from the last of these sources is omitted from the present Statement, because the Senatus have not hitherto been able to obtain the necessary information for determining its amount, having no control over these funds or their application. The total amount is believed to be upwards of £1600 annually.

A.—CAPITAL IN CHARGE OF THE SENATUS ACADEMICUS, INCLUDING FLOATING BALANCES.

As at 31st August 1889.

I.—DESTINED FOR SPECIAL PURPOSES BY DEED, STATUTE, OR ORDINANCE.

1. For Salaries of Professors, viz. :—

(1.) Pulteney Foundation (Agricultural Chair) -	£1,176 14 9
(2.) Thomson Foundation (4-5ths Nat. Hist. Chair)	1,123 11 9
(3.) Muir Foundation (Sanskrit Chair) - -	7,802 9 11
(4.) Reid Foundation (Music Chair) - - -	12,000 0 0
(5.) Baxter Foundation (Engineering Chair) -	5,037 17 6
(6.) Murchison Foundation (Geology Chair) -	5,283 5 8
(7.) Watson-Gordon Foundation (Fine Art Chair)	11,103 16 0
(8.) Bell Foundation (Education Chair) - -	10,837 0 0
Carry forward	£54,364 15 7

[1] £540 of this sum is payable out of Government grant.

				Brought forward			£54,364	15 7
(9.)	Chair of Commercial and Political Economy, and Mercantile Law (revenue on hand),[1]						0	6 7
(10.)	Celtic Chair,						15,211	9 3
(11.)	Gifford Bequest,						22,894	8 4
				TOTAL			£92,470	19 9
2.	For Class Expenses and Assistants :—							
(1.)	Reid Found. (Music Chair),			£8,500	0	0		
(2.)	Baxter Found. (Engineering Ch.)			867	0	10		
(3.)	Murchison Found. (Geology Ch.)			1,055	17	11		
(4.)	Thomson Foundation (1-5th Mineralogy),			280	17	11		
(5.)	Watson-Gordon Foundation			1,144	15	8		
			TOTAL,				11,848	12 4
3.	For Reid Commemoration Concert						8,000	0 0
4A.	For Bursaries, Scholarships, Fellowships and Prizes, intrusted to Senatus:—							
(1.)	Aitken Scholarship			£2,992	5	0		
(2.)	Neil Arnott Prize			1,211	13	10		
(3.)	Neil Arnott Scholarship			1,159	2	2		
(4.)	Ardvoirlich Bursary			528	4	9		
(5.)	Baxter Mathematical and Philosophical Scholarship			3,503	13	10		
(6.)	Baxter Natural and Physical Science Scholarships			3,967	18	1		
(7.)	Misses Baxter of Balgavies Scholarships			4,466	1	6		
(8.)	John Edward Baxter Scholarships			7,850	10	5		
	Do., For Examiners' Fees			389	12	4		
(9.)	Bruce of Grangehill & Falkland's Scholarships and Bursaries			14,719	15	2		
(10.)	Beaney Prize			1,000	0	0		
(11.)	Cairns Bursary			626	3	10		
(12.)	Cameron Prize			2,604	5	7		
(13.)	Dr John Aitken Carlyle's Medical Bursaries			1,903	18	6		
(14.)	Cousin Prize			504	2	7		
(15.)	Drummond Scholarship			2,721	7	4		
	Do., For Examiners' Fees			298	6	1		
(16.)	Dickson Travelling Fund			2,971	0	7		
			Carry forward	£53,418	1	7	£112,319	12 1

[1] No Capital—Income derived from annual payment by governors of George Watson's and Daniel Stewart's Hospitals.

	Brought forward	£53,418	1	7	£112,319	12	1
(17.)	Edinburgh University Endowment Association Arts Bursaries (revenue on hand)[1]	200	0	0			
(18.)	Ettles Divinity Scholarships	3,231	10	7			
(19.)	Do. Medical Scholarship	1,000	0	0			
(20.)	Ellis Prize	1,013	5	0			
(21.)	Falconer Memorial Fellowship	3,648	11	9			
	Do., For Examiners' Fees	144	5	4			
(22.)	Fotheringham & Forrest Bursaries	1,210	4	11			
(23.)	James Fairbairn Scholarship	1,162	7	6			
(24.)	Freeland Barbour Fellowship	1,562	10	0			
(25.)	Glover Divinity Scholarship	1,069	3	5			
(26.)	Gray Scholarships	2,264	5	7			
(27.)	Guthrie Fellowship	2,655	18	10			
(28.)	Grierson Bursaries	10,603	2	6			
(29.)	Gunning Theological Scholarships[1]	111	4	9			
(30.)	Hamilton Philosophical Fellowship	2,645	10	10			
	Do., For Examiners' Fees	150	12	11			
(31.)	Harrison Bursary	960	8	8			
(32.)	Hope Prize	2,644	6	7			
(33.)	Robert Hunter Bursaries	1,003	15	8			
(34.)	Jardine Bursary	1,397	9	6			
(35.)	Charles Jardine Bursaries	4,402	15	6			
(36.)	Johnstone of Harthope Bursary	540	18	1			
(37.)	Jeffrey Bursaries	4,582	7	0			
(38.)	David Kidd Divinity Scholarship	1,140	7	1			
(39.)	Leith Harbour Annuity Fund	1,133	15	11			
(40.)	Lang's Bequest	482	16	9			
(41.)	Leckie Mactier Fellowship	2,041	16	9			
(42.)	Charles Maclaren Scholarship	2,850	1	9			
	Do., For Examiners' Fees	256	12	4			
(43.)	Maxton Scholarship	1,405	16	2			
(44.)	Mackenzie Classical Scholarship	3,114	17	3			
(45.)	Macpherson Bursary	3,076	3	8			
(46.)	Mackenzie Bursaries in Anatomy	1,011	14	4			
(47.)	Marshall Bursary	1,003	18	1			
(48.)	MacKinnon Bursaries	1,651	6	8			
(49.)	Mann Bursaries	2,118	17	9			
(50.)	Newton Bursary	2,431	16	11			
(51.)	Prizes in Sanskrit, *Capital applicable*	68	13	8			
	Carry forward	£125,411	11	7	£112,319	12	1

[1] Capital not in hands of Senatus.

	Brought forward	£125,411	11	7	£112,319	12	1
(52.)	Pitt Club Classical Scholarship	1,725	1	1			
(53.)	Pitt Club Theological Scholarship	3,278	15	5			
(54.)	Rhind Scholarships	5,017	6	11			
(55.)	Horsliehill Scott Bursaries	2,080	0	9			
(56.)	Shaw Philosophical Fellowship	4,364	15	2			
(57.)	Shortt Bursary	298	2	6			
(58.)	Steven of Ballahouston Scholarship	2,033	11	0			
(59.)	Syme Surgical Fellowship	3,051	14	8			
	Do., For Examiners' Fees	302	10	8			
(60.)	Scott and Dunbar Prize	268	5	7			
(61.)	Dobbie Smith Prize	168	0	3			
(62.)	Mackay Smith Scholarships	3,300	0	0			
	Do., For Examiners' Fees	119	10	9			
(63.)	Stark Scholarship	1,833	6	0			
(64.)	Tarsappie Bursary	167	0	10			
(65.)	Vans Dunlop Scholarships	75,568	7	8			
(66.)	Wightman Prize	376	11	8			
(67.)	Robert Wilson Memorial Prize	249	16	11			
(68.)	Webster Bursaries	4,078	1	2			
(69.)	John Welsh Bursaries	3,746	13	10			
(70.)	Whitelaw Bursaries	2,313	7	10			
	TOTAL				239,752	12	8
5.	For Bursaries and Prize intrusted to individual Members of Senatus and others :—						
(1.)	Dundas Bursaries	£1,163	2	8			
(2.)	Goodsir Memorial Prize	1,160	18	7			
(3.)	Mackie Bursaries	1,997	11	1			
(4.)	Maclaurin Bursary	1,997	3	8			
(5.)	Patrick Bursaries	3,541	1	4			
(6.)	Renton Bursary in Arts	656	5	3			
(7.)	Renton Bursary in Divinity	666	10	2			
(8.)	James Scott Scholarship	1,037	8	9			
	TOTAL				12,220	1	6
6.	Principal's Official Residence				4,694	0	0
7.	For Completion of present College Buildings :— Robert Cox's Bequest, with interest				20	16	10
8.	Gilchrist Fund for purchase of apparatus				2,224	18	9
9.	Eskbank Feu-Duties—Casualty Fund				128	6	3
	Carry forward				£371,360	7	8

Brought forward	£371,360	7	8
II.—CAPITAL, THE INCOME OF WHICH IS APPLICABLE FOR THE GENERAL PURPOSES OF THE UNIVERSITY.			
(1.) General Reid's Trust Fund, Balance after setting aside sufficient Capital to provide Income for Special Purposes as above	£20,000 0 0		
(2.) General Sir Joseph Straton's Trust Fund	14,125 18 6		
(3.) Robert Cox's Bequest	1,794 14 8		
(4.) Alexander Gibson's Bequest	2,209 4 2		
(5.) John Fulton's Bequest	2,744 10 4		
	40,874	7	8
III.—DISPOSABLE CAPITAL BELONGING TO GENERAL UNIVERSITY FUND, AS AT 31ST AUGUST 1889.			
1. Heritable Securities, &c.	£26,611 17 4		
2. Balances in Bank, &c.	2,637 17 7		
Total Disposable Capital	29,249	14	11
Total Capital in charge of Senatus,	£441,484	10	3

B.—CAPITAL INVESTED IN NAME OF THE UNIVERSITY COURT.

SPECIALLY DESTINED BY DEED.

Baxter Fund, for further Endowment of the Chairs in the Faculty of Arts, excepting Engineering and Sanskrit,	£17,961	4	3
	£17,961	4	3

C.—INCOME OF THE UNIVERSITY DESTINED BY DEED, STATUTE, OR ORDINANCE, 1888-89.

1. For Salaries of Professors :—			
(1.) From Interest, &c., of Funds in Charge of the Senatus. See Statement of Capital, A. I. 1	£2,382	13	1
(2.) From Leith Harbour Annuity	1,071	18	6
(3.) From Parliamentary Grants prior to Universities Commisson	1,210	0	0
(4.) From Parliamentary Grants by Financial Ordinance of Universities Commission, and Sanskrit Chair Ordinance	3,104	0	0
(5.) From Parliamentary Grants since the Universities Commission	850	0	0
(6.) From Deanery of the Chapel Royal	900	0	0
(7.) From Land Revenues of the Crown	250	0	0
(8.) Foundation for Conveyancing Chair, paid yearly by Society of Clerks to H.M. Signet	105	0	0
Carry forward	£9,873	11	7

	Brought forward				£9,873	11 7
(9.)	From Funds of George Watson's and Daniel Stewart's Hospitals - - - -				450	0 0
(10.)	From Interest of Fund in charge of University Court. See Statement of Capital, B. (Subject to deduction for Income-Tax and Expenses) - - - - - -				603	16 0
2.	For Class Assistants and Class Expenses :—					
(1.)	From Reid Fund for Music Chair. See Statement of Capital. A. I. 2	£300	0	0		
(2.)	From the Gen. Univ. Fund, for the Chairs of Chemistry, Nat. Philosophy, Anatomy, Materia Medica, and Medical Jurisprd.	735	0	0		
(3.)	From Foundation for Chair of Engineering - - -	28	14	10		
(4.)	From Murchison Foundation for Chair of Geology - -	36	10	0		
(5.)	From Thomson Fund (Mineralogy), for Do. - -	8	14	4		
(6.)	From New Parliamentary Grant for Class Assistants in Faculty of Arts	400	0	0		
(7.)	From Funds of Geo. Watson's and Daniel Stewart's Hospitals for Chair of Commercial Economy	50	0	0		
(8.)	From Watson-Gordon Fund for Chair of Fine Art - -	41	4	0		
					1,600	3 2
3.	For Non-Professorial Examiners in Arts and Medicine, From New Parliamentary Grant - -				540	0 0
4.	For Scholarships, Bursaries, and Prizes :—					
(1.)	From Capital Funds in Charge of Senatus. See Statement of Capital, A. I. 4 and 5 -	£8,506	8	3		
(2.)	From Leith Harbour Annuity -	414	2	4		
(3.)	From Funds of Geo. Watson's and Daniel Stewart's Hospitals for Chair of Commercial Economy	24	0	0		
					8,944	10 7
5.	For Reid Commemoration Concert, from Reid Fund, See A. I. 3 - - - - -				300	0 0
6.	For Completion of present College Buildings from Cox Fund. See A. I. 7 - - - -				22	4 0
7.	For Agricultural and Dairy Schools from Special Government Grant - - - -				300	0 0
	Carry forward				£22,634	5 4

		Brought forward		£22,634	5	4
8.	For Lectureship on the Philosophy of Natural History			50	0	0
9.	For Lord Gifford's Lectureship			763	16	0
10.	For purchase of Scientific Apparatus from Gilchrist Fund			80	8	10
11.	For Management of Special Funds from interest of Floating Balances			114	2	10
12.	For Casualty and Expenses on Eskbank Feu-duties			46	8	8
	Total Destined Income,			£23,689	1	8

D.—TOTAL UNIVERSITY INCOME.

Destined Income as above			£23,689	1	8
General Fund Income, as below	£16,304 16 2				
Less Amount destined by Ordinance for Assistants and Class Expenses, entered above, C. 2 (2.)	735 0 0				
		15,569	16	2	
Total University Income		£39,258	17	10	

E.—INCOME AND EXPENDITURE OF GENERAL UNIVERSITY FUND, 1888-89.

I.—INCOME.

1.	Matriculation Fees			£3,479	10	0
2.	Graduation Fees, viz.:—					
	(1.) Arts	£414 10 0				
	(2.) Science	341 12 0				
	(3.) Medicine	6,750 12 6				
	(4.) Divinity	58 16 0				
	(5.) Law	133 7 0				
			7,698	17	6	
3.	Fees of Registration of Members of General Council		324	0	0	
4.	Fees of Admission to Library		63	10	6	
5.	Compensation for Stationers' Hall Privileges relinquished, for two years		1,150	0	0	
6.	Grant from Government to Aid in Maintaining and Repairing Buildings		500	0	0	
7.	Interest of Invested Funds and Bank Accounts		911	14	2	
8.	From Funds bequeathed to the University for General Purposes, viz.:—					
	(1.) General Sir Joseph Straton's Bequest	£492 12 8				
	(2.) Two-fifths of Robert Cox's Bequest	69 19 10				
	(3.) Alexander Gibson's Bequest	65 5 6				
	(4.) John Fulton's Bequest,	102 7 6				
			730	5	6	
	Carry forward		£14,857	17	8	

	Brought forward				£14,857	17 8
9.	From Funds partly appropriated to Special Purposes, the Surplus Revenues of which fall to the General University Fund, viz.:—					
	(1.) Leith Harbour Annuity Fund	£660	4	8		
	(2.) General Reid's Trust Fund -	669	3	10		
					1,359	8 6
10.	Miscellaneous Receipts:—					
	(1.) For authority to publish Calendar	£60	0	0		
	(2.) For use of Rooms for Meetings, &c.	21	10	0		
	(3.) Sundries - - -	6	0	0		
					87	10 0
	Total General Fund Income, - -				£16,304	16 2

II.—Expenditure.

General Administration:—

1.	*University Court*—					
	(1.) Secretary's Salary - - -				£102	7 4
	(2.) Printing, Advertising - -				67	2 7
	(3.) Stationery, and Incidents -				16	14 5
					£186	4 4
2.	*Senatus Academicus*—					
	(1.) Secretary's Salary - -	£243	15	0		
	(2.) Clerk's Do. - -	221	16	2		
	(3.) Assistant Clerks' Do. -	195	0	0		
	(4.) Dean of Faculty of Medicine's Do.	97	10	0		
	(5.) Dean of Faculty of Arts' Do.	73	2	8		
	(6.) Dean of Faculty of Divinity's Do.	29	5	0		
	(7.) Dean of Faculty of Law's Do.	48	15	0		
	(8.) Incidents - - -	251	5	2		
					1,160	9 0
3.	*General University Council*—					
	(1.) Secretary's Salary - -	£9	15	0		
	(2.) Fees to Registrar and Assistants	128	2	0		
	(3.) Meetings, Advertisements, &c.	43	3	3		
					181	0 3
4.	*Management*—					
	(1.) Factor's Salary - -	£232	17	2		
	(2.) Office Incidents, Stationery, &c.	26	6	11		
	(3.) Auditor's Fee - -	35	14	0		
	(4.) Law Agent's Account -	87	14	6		
					382	12 7
	Carry forward				£1,910	6 2

	Brought forward	£1,910	6 2
5. *Editing Calendar*		29	5 0
		£1,939	11 2

II. LIBRARY :—			
1. Librarians' Salaries	£965 0 0		
2. Books	952 1 10		
3. Bookbinding	233 0 2		
4. Printing	11 2 8		
5. Stationery	11 15 0		
6. Wages to Servitor	53 5 0		
7. Freights, Postages, and Incidents	16 16 10		
		2,243	1 6
III. MUSEUMS AND TEACHING APPLIANCES :—			
1. Anatomical Museum	£228 10 0		
2. Botanical Herbarium	100 0 0		
3. Natural Philosophy Musuem	50 0 0		
4. Midwifery Do.	15 0 0		
5. Natural History Do.	10 0 0		
		403	10 0
IV. BUILDINGS :—			
1. Maintenance, Repairs, and Renewals, &c.	£3,270 8 7		
2. Cleaning, Heating, Lighting	992 10 7		
3. Public and Parochial Burdens and Feu Duty	487 3 1		
4. Insurances	153 9 6		
		4,903	11 9
V. SERVICE :—			
1. Janitor	£155 0 0		
2. Music Class Room Keeper	30 0 0		
3. Warder and Servitors and their Dress,	723 19 11		
		908	19 11
VI. CLASS ASSISTANTS AND CLASS EXPENSES :—			
1. Allocated by Commissioners' Ordinance	£735 0 0		
2. Allocated since by Senatus	1,579 0 0		
		2,314	0 0
VII. EXAMINERS :—			
1. Divinity	£62 10 0		
2. Medicine	725 0 0		
3. Arts	153 0 0		
4. Law	52 10 0		
5. Miscellaneous	35 14 0		
		1,028	14 0
	Carry forward	£13,741	8 4

	Brought forward			£13,741	8	4
VIII. PRINTING AND ADVERTISEMENTS :—						
1. Printing	£292	0	8			
2. Advertisements	154	9	3			
				446	9	11
IX. MEDALS AND PRIZES :—						
1. Class Medals	£116	15	0			
2. Class Prizes	157	10	0			
				274	5	0
X. ORDINARY GRADUATION EXPENSES :—						
M.D. Stamp Duty deducted				93	4	0
XI. INCIDENTAL GRANTS :—						
1. Athletic Club	10	10	0			
2. University Musical Association	10	0	0			
3. University Golf Club	5	0	0			
4. Subscription to Students' Union Building Fund	500	0	0			
5. Sundries	62	16	6			
				588	6	6
Total General Fund Expenditure				£15,143	13	9
Surplus of Revenue				1,161	2	5
Leaving Income				£16,304	16	2

The University Court.

ABSTRACT OF THE PROCEEDINGS OF THE UNIVERSITY COURT, FROM APRIL 1889 TO APRIL 1890.

MONDAY, 15TH JULY 1889.—It was reported that the proposed Alteration of Ordnance No. 23, *Edinburgh* No. 5, Section xl., relating to the Principal's official house, had received the consent of the Chancellor of the University, that it had been intimated to the other University Courts as usual, and that the Report on it to Her Majesty in Council had been prepared and sent in.

It was reported that the approaching vacancy in the office of Governor of the Stirling Educational Trust appointed by the Court, held by the Rev. Dr John M'Laren, of Larbert, had been notified to the Court by the Clerk to the Trust, and that in reply Dr M'Laren's reappointment by the Court had been intimated.

There was submitted a proposed Alteration of Ordinance No. 16, *Aberdeen* No. 6, sections x. to xiv., and section xxii., providing for a rearrangement of the Divisions of the Examinations for Graduation in Medicine in the University of Aberdeen, a copy of the Report on which had been received from the Lord President of the Council for remarks. In connection therewith the Court had before them a Minute of Senatus, of date 28th June 1889, approving a Report by the Faculty of Medicine, expressing much satisfaction that the general effect of the proposed Alterations would be to bring the Ordinances regulating the Examinations in Medicine and Surgery in the University of Aberdeen into close harmony with the Ordinances relating to such Graduation in the University of Edinburgh, and with changes thereon which have been recommended by the Senatus; and reporting that in their opinion there was no reason for the University of Edinburgh to take any objection to the proposals of the University of Aberdeen. The Court directed that these views of the Senatus should be communicated to the Lord President of the Council, and that there should also be sent to him a copy of the following Minute of the Court of 11th March last, adopted after taking evidence and hearing parties on Alterations and proposed Alterations of the Regulations for Graduation in Medi-

cine in Edinburgh, similar to some of those now proposed by the University of Aberdeen: — "That the time which has elapsed since the approval by Her Majesty in Council of the Alteration of 8th February 1888 in the arrangements for the Examinations in the Subjects of the First Examination for Graduation in Medicine is as yet too short to admit of a definite conclusion being formed as to the effect it may have on the further course of Medical Study; and that the near prospect of the whole subject of University Examination and Graduation in Scotland being under the consideration of an Executive Commission, renders it undesirable to make any alteration in the existing arrangements for the Examinations for Graduation in Medicine."

It was reported that the amended Rules (No. 3) for Graduation in Science in the Department of Agriculture, adopted at last meeting, had been communicated to the Senatus and the Highland and Agricultural Society, and that they had been submitted to the Chancellor of the University and sanctioned by him. It was ordered that the Extract Minute, with the Chancellor's Sanction appended, should be sent to the Senatus Academicus for preservation.

The Rev. William L. Davidson, M.A., LL.D., Manse of Bourtie, was appointed to be the Additional Examiner in Mental Philosophy in the University for three years from 1st October next.

Dr A. A. Matheson was recognised as a Teacher of Medicine in Edinburgh, whose course of lectures on Midwifery should qualify for Graduation in Medicine in the University, in terms of Ordinance No. 8, *Edinburgh* No. 3, section vi. (4).

Recognition under the same Ordinance and Section was continued to Dr William Craig, Lecturer on Materia Medica and Teacher of Practical Materia Medica in Edinburgh, and to Dr W. Scott Lang, Lecturer on Surgery in Edinburgh, on change of their teaching rooms.

On consideration of a Minute of Senatus, the Court approved of the institution by them of a Lectureship on Forestry, and of the appointment as Lecturer of Mr William Somerville, B.Sc. Edin., and Graduate in Economics of the University of Munich. The Court further sanctioned the opening of a Class by the Lecturer, and fixed the fee at £3, 3s. for a course of one hundred lectures.

The Library Report for 1887-88 was under consideration, and it was ordered that various memoranda by members of the Court should be communicated to the Senatus, and that the opinion of the Court should be intimated to them, that it seemed advisable that they should appoint a small committee to consider how certain suggestions in the memoranda could be carried out.

Monday, 18th November 1889.—It was reported that a copy of the Universities (Scotland) Act, 1889, had been received from the office of the Secretary for Scotland, and that, under Section 5 (4), the University Courts established by the Universities (Scotland) Act, 1858,

were continued in office till the new Courts under the Act of 1889 should be declared by the Commissioners under the latter Act to be duly constituted ; but without the additional powers conferred by the latter Act, except that of agreeing to the affiliation of new Colleges.

It was reported that the Assessorship for the Senatus was vacant, Professor Campbell Fraser's third term of office having expired on 26th October last.

It was reported that the Minute containing the amended Rules (No. 3) for Graduation in Science in the Department of Agriculture, with the Chancellor's Sanction appended, had been sent to the Senatus for preservation, and that its receipt had been acknowledged.

It was reported that the Rev. William L. Davidson had accepted appointment as Examiner in Mental Philosophy.

An Order of Her Majesty in Council was received, approving the Alteration of Ordinance No. 23, *Edinburgh* No. 5, sec. xl., to authorise provision to be made for preserving the amenity of the Principal's official house. Instructions were given that the Order in Council should be sent to the Senatus for preservation.

It was reported that Observations by the Court on the proposed Alteration on Ordinance No. 16, *Aberdeen* No. 6, as to the arrangement of the Examinations for Graduation in Medicine at Aberdeen had been prepared and sent to the Council Office, as ordered at last meeting ; that copies of Observations on the subject by the Glasgow University Court had been received ; and that a Reply by the Aberdeen University Court had been received from the Council Office for remarks, and sent to the Senatus for opinion.

A Representation by the General Council of the University to the effect that the Professional Oral Examinations at Edinburgh University should be open to Members of all the Scottish University General Councils was received. Instructions were given that it should be sent to the Senatus for opinion.

A letter from the Secretary of Senatus was received, intimating the death of Professor James Muirhead, and the consequent vacancy in the Chair of Civil Law. The Court ordered that the vacancy should be intimated to the bodies interested in the patronage.

Mr Maurice Paterson, LL.D., was reappointed Additional Examiner for the Schoolmaster's Diploma for three years from the 15th inst.

The appointment of the following Class Assistants by their respective Professors was approved :—Mr F. R. Jamieson, M.A., Latin ; Mr J. A. Smith, M.A., Greek ; Mr R. E. Allardice, M.A., Mathematics ; Mr W. Peddie, D.Sc., Natural Philosophy ; Mr David Hepburn, M.B., C.M., Anatomy ; Mr John Gibson, Ph.D., and Mr Leonard Dobbin, Ph.D., Chemistry ; and Mr Charles Hunter Stewart, M.B., C.M., Medical Jurisprudence.

On consideration of a Minute of Senatus approving of the appoint-

ment of Mr Robert Morris as Assistant in Welsh to the Professor of Celtic, and also approving of proposed consequent arrangements, the Court sanctioned the opening of a Class of Welsh Language and Literature, to meet twice a week during the Winter Session. The Fee was fixed at £1, 1s., as recommended by the Senatus.

On consideration of a Minute of Senatus, the Court approved of an extra payment of £3, 3s. a day to such of the Additional Examiners in Medicine as were required to act at special Final Examinations in Medicine held in October last, with travelling expenses to any of them residing at a distance from Edinburgh.

On consideration of an application by the College of State Medicine, London, for recognition in connection with Graduation in Science in the Department of Public Health, and of a relative letter from the Convener of Science Degrees Committee of Senatus to the Secretary of Senatus, the Court ordered that it should be intimated that, under the existing Regulations of the University, such recognition was not necessary.

On consideration of an application by Mr R. Howden, M.B., Lecturer on Anatomy in the Durham University College of Medicine, Newcastle-on-Tyne, for recognition in connection with Graduation in Medicine, and of a relative letter from the Senior Proctor of Durham University, the Court were of opinion that Mr Howden was in the position of being a University Teacher, and that special recognition was not required in his case.

Intimation was received from three of the recognised Lecturers on Medicine in Glasgow that the Institution in which they taught was now called "St Mungo's College." The Court ordered that this should be intimated to the Senatus.

The Class Returns by the University Professors and the recognised Medical Lecturers for 1888-89 were laid before the Court and remitted to a Committee.

MONDAY, 10TH DECEMBER 1889.—Professor Campbell Fraser took his seat on reappointment by the Senatus as their Assessor in the Court, under the Act of 1858.

Intimation was received from the Senatus that the Rev. Professor Malcolm C. Taylor, D.D.; Professor Sir William Turner, D.C.L., LL.D.; and Professor A. Crum Brown, M.D., had been appointed to be their Assessors in the Court under the Act of 1889.

It was reported that Mr Maurice Paterson, LL.D., had accepted reappointment as Examiner in Education for the Schoolmaster's Diploma.

The Court resumed consideration of the proposed Alterations by the Aberdeen University Court on Ordinance No. 16, *Aberdeen* No. 6, as to the arrangement of the Professional Examinations for Graduation in

Medicine at Aberdeen University, and had before them the Reply of the Aberdeen Court to the Observations of the Glasgow and Edinburgh Courts, and also the Remarks of the Glasgow Court, and a Minute of Senatus, relative to the Reply. The Minute of Senatus was in favour of the proposed Alteration. The Court remained of opinion that some of the proposals required further experience at the University of Edinburgh, in which they had been carried out, before it would be prudent to carry them further, and that the appointment of an Executive Universities Commission made it inopportune to proceed with the proposed Alterations before Her Majesty in Council under the Act of 1858.

The Court approved of the usual arrangements having been made for the appointment of Additional Examiners in Natural History and Clinical Surgery at the stated meeting on Monday, January 20, 1890.

The Court approved of the usual arrangements having been made for the appointment of the Additional Examiners in Law on the same occasion.

The Court approved of the appointment of Dr John Playfair to be one of the Lecturers on the Diseases of Children, in succession to Dr Underhill, whose term of office had expired.

On consideration of a Minute of Senatus, the Court approved of the continuance of the Salaries of the Secretaries and of the Deans of Faculties for the current Session.

On consideration of a Minute of Senatus, the Court granted recognition, under Ordinance No. 8, Section vi. (4), to the following Teachers of Medicine :—(1) Philip J. White, M.B., Lecturer on Natural History, University College, Bangor ; (2) Professor T. E. Thorpe, Ph.D., F.R.S., Lecturer on Chemistry and Teacher of Practical Chemistry, School of Mines, &c., London ; (3) Frank Clowes, D.Sc., Lecturer on Chemistry and Teacher of Practical Chemistry, University College, Nottingham ; (4) E. Waymouth Reid, M.B., Lecturer on Physiology and Teacher of Practical Physiology, University College, Dundee ; (5) Ralph Stockman, M.D., Lecturer on Materia Medica and Teacher of Practical Materia Medica, Edinburgh ; and (6) George A. Gibson, M.D., Lecturer on Practice of Medicine, Edinburgh.

Recognition, under the same Ordinance, was continued to Dr A. M. Buchanan, Lecturer on Anatomy and Teacher of Practical Anatomy ; Dr Ebenezer Duncan, Lecturer on Medical Jurisprudence ; Dr James Dunlop, Lecturer on Surgery ; Dr Sampson Gemmell, Lecturer on Practice of Medicine ; and Dr Alexander Napier, Lecturer on Materia Medica—all of Anderson's College, Glasgow—on change of their teaching Rooms to the New Medical School buildings of the College.

The death of Dr W. R. M'Nab, recognised Lecturer on Botany, Dublin, was reported, and the necessary correction of the list of Recognised Teachers of Medicine was authorised.

WEDNESDAY, 8TH JANUARY 1890.—The New University Court, as constituted under the Universities Scotland Act, 1889, met for the first time. The following were present and took their Seats as Members of the New Court :—Principal Sir William Muir ; Lord Provost John Boyd ; Mr T. G. Murray, W.S.; Solicitor-General Stormonth Darling, Mr James Colston, Dr Heron Watson, Lord Justice-Clerk Macdonald, Dr John Duncan, Mr Thomas M'Kie, advocate ; Professor Campbell Fraser, the Rev. Professor Taylor, Professor Sir William Turner, and Professor A. Crum-Brown.

The following Declaration by the Scottish University Commissioners was laid before the Court and read :—"At Edinburgh, the 6th day of January 1890.—Universities (Scotland) Act, 1889.—Whereas by an Act passed in the 52d and 53d years of Her Majesty's reign, intituled 'An Act for the Better Administration and Endowment of the Universities of Scotland,' the Commissioners for the purpose of the said Act are empowered to declare (section 5, subsection 3) that the University Courts under the said Act have been duly constituted, the Commissioners hereby declare :—That the new University Court of the University of Edinburgh is duly constituted in terms of the said Act.—(Signed) A. S. KINNEAR, Chairman."

There was laid before the Court a Minute of the General Council of the University containing the appointment of Lord Justice-Clerk Macdonald, Dr John Duncan, and Mr Thomas M'Kie, advocate, as the additional Assessors for the Council under the said Act.

It was reported that at last meeting of the old Court a Minute of Senatus had been submitted containing the appointment of the Rev. Professor Taylor, Professor Sir William Turner, and Professor Crum-Brown as the additional Assessors for the Senatus under the said Act.

Mr John Christison, W.S., was appointed Secretary of the New Court.

A Committee was appointed to report to the Court on various arrangements as to business details, including Standing Orders, Committees, &c.

It was directed that the Members present at meetings should be recorded in the order in which their offices are named in the Act of 1889, and that the Assessors for the General Council and Senatus should be recorded in the order in which their names appear in the Minutes containing their appointment.

It was ordered that existing Rules for conducting business should be continued till altered.

It was arranged that, so far as possible, the meetings of the Court should be held on Mondays at 4 o'clock.

The Stated Meeting on Monday, the 20th inst., was postponed till Monday, the 27th.

Mr John Cook, W.S., and Mr Henry Cook, W.S., were appointed joint Factors and Law Agents for the University.

The Factors were authorised to meet the ordinary current expenses of the financial year 1889-90.

A Report of the Finance Committee of Senatus on the University Accounts for 1888-89, with estimates for 1889-90, was received from the Senatus. It was ordered that it should be printed for the use of the Members.

Mr Allan Clark was appointed Clerk of Works on the same terms as formerly.

A Report by the House Committee of Senatus as to work immediately necessary for ventilating and heating part of the north-west of the old College Buildings, including the Court-room, and other work—with relative supplementary report of the Finance Committee of Senatus, authorising the work—was considered, and the arrangements were approved.

A Representation on behalf of the Presbytery of Edinburgh as to three volumes, said to be original Records of the Presbytery, and relative proceedings in the Court of Session, were considered. Instructions were given that the Law Agents should draw up a Report on the matter for the consideration of the Court.

It was agreed to appoint a Curator of Patronage in succession to Lord Balfour of Burleigh at the meeting on the 27th inst.

Dr John Barlow, recognised Lecturer on Physiology in Glasgow, was recognised as a Teacher of Practical Physiology, in terms of Ordinance No. 8, sec. vi. (4).

Monday, 27th January 1890.—It was reported that no Appeals had been received in connection with the Register of the General Council for 1890.

Lord Justice-Clerk Macdonald was appointed to be one of the Curators of Patronage of the University for three years from the 26th of February next, in succession to Lord Balfour of Burleigh, whose second period of office then expires.

Mr James Reid, LL.B., advocate, and Mr Mark Davidson, LL.B., advocate, were appointed to be the Additional Examiners in Law for the next three years' period of office.

Professor W. A. Herdman, D.Sc., University College, Liverpool, was appointed to be the Additional Examiner in Natural History, and Dr J. Crawford Renton, Glasgow, to be the Additional Examiner in Clinical Surgery. These appointments are for the current year, but they may be continued for five years by annual reappointment.

The other Additional Examiners in Medicine were reappointed for the current year.

The appointment of the Assistant Registrars of the General Council was deferred till the Stated Meeting in February.

The Committee on Standing Orders, &c., submitted draft of Provisional Standing Orders, which was considered and in part revised and adjusted. Further revisal of the Standing Orders and other business was deferred till Thursday, 30th January, on which day it was ordered that the Court should meet.

The following Members were appointed to act on the three Standing Committees provided for in the Provisional Standing Orders :—*Finance Committee*—The Principal, *ex officio*, Mr T. G. Murray, Mr Colston, Dr Heron Watson, the Rev. Professor Taylor, and Professor Sir William Turner. *Works Committee*—The Principal, *ex officio*, The Lord Justice-Clerk, Dr Duncan, Mr M'Kie, Professor Sir William Turner, and Professor Crum-Brown. *Business and Law Committee*—The Principal, *ex officio*, Mr T. G. Murray, Solicitor-General Stormonth Darling, Mr M'Kie, Professor Campbell Fraser, and the Rev. Professor Taylor.

THURSDAY, 30TH JANUARY 1890.—The revisal and adjustment of the Provisional Standing Orders was continued and completed, and it was ordered that they should be submitted as revised at next meeting for final approval and adoption.

Designs for the Common Seal of the Court were submitted. One of them was selected, and instructions were given to have the Seal prepared accordingly.

The University accounts for 1888-89 and Report thereon, and estimates by the Finance Committee of Senatus, &c., were remitted to the Finance Standing Committee.

The Library report and accounts for 1888-89 were remitted to the Business and Law Standing Committee to be considered and reported on when received.

Instructions were given to ask the Senatus if they were taking any steps with regard to their Minute of 16th December 1882 on Entrance Examinations in Arts, and their Minute of 18th December 1886 as to Degrees in Music, subjects which have been lying over pending the appointment of an Executive Commission having power to deal with them.

Various other business details were disposed of, or remitted to one or other of the Standing Committees.

MONDAY, 17TH FEBRUARY 1890.—The death of Professor James Lorimer was reported, and instructions were given to intimate the vacancy in the Chair of Public Law, thereby caused, to the Secretary for Scotland,—the patronage being with the Crown.

It was reported that the Standing Committees of the Court had

appointed their Conveners as follows :—*Business and Law Committee*—Mr Murray and the Rev. Dr Taylor. *Finance Committee*—the Principal and Sir William Turner. *Works Committee* — Dr Crum Brown.

The Provisional Standing Orders of the Court were further revised, approved, and declared to be in operation, but full power of alteration was retained till further orders.

Mr Charles Hunter Stewart, M.B., C.M., and Mr Arthur Eugene Claxton, M.A., were appointed to be the Assistant Registrars for the revisal, in December next, of the Register of the General Council of the University for 1891.

Mr J. P. Coldstream was re-appointed to be the Lecturer on Civil and Criminal Procedure in the Superior and Inferior Courts of Scotland for three years.

On consideration of a Minute of Senatus, Mr William Somerville, B.Sc., D. Œcon., was re-appointed Lecturer on Forestry for three years.

The Court resumed consideration of proposed amended Regulations as to the Recognition of Teachers of Medicine under Ordinance No. 8, section vi. (4) ; and in connection therewith had before them a relative Minute of Senatus. The Regulations, on which the Senatus did not suggest any further amendments, were approved and adopted.

The Committee of the Old Court on the Class Returns of the University Professors and the Recognised Teachers of Medicine for 1888-89, submitted memoranda thereon, which were considered. It was ordered that the Professors' Returns should be sent back to the Senatus for preservation, as usual.

Reports by the Finance Committee on applications for increase of Salaries, lighting of the Pathology Practical Class-rooms, letting of the Principal's official house, Accounts passed for payment, the Chief Clerk's accounts for January, and the arrangements as to the duties of the University Clerks, were considered and disposed of.

MONDAY, 10TH MARCH 1890.—A letter from the Town Clerk was received, intimating the reappointment of Councillor James Colston as Assessor in the Court for the Town Council from the 9th inst.

It was reported that the vacancy in the Chair of Public Law had been intimated to the Secretary for Scotland, and that receipt had been acknowledged.

It was reported that Mr Coldstream had accepted office as Lecturer on Court Procedure ; that Mr Somerville had accepted office as Lecturer on Forestry; and that Mr Charles Hunter Stewart had accepted office as Assistant Registrar.

It was reported that the Works Committee had appointed Mr M'Kie Joint-Convener of the Committee with Professor Crum-Brown.

The following minute with regard to the late Professor Lorimer was adopted :—"The University Court record their sense of the loss which the University has sustained by the death of Professor James Lorimer, LL.D., Dr Jur. Bonon, late Professor of Public Law, who has for twenty-seven years signally promoted the philosophical study of jurisprudence in that capacity, in which he exhibited a high ideal of academical life as a Professor. Few men in his generation have done so much as Professor Lorimer to encourage in Scotland, in a patriotic spirit, a generous culture, and the love of learning for its own sake. By this means, and as one of the most zealous and influential of those who inaugurated the movement for Scottish University reform, more than thirty years ago, he has left his mark not only on this University, especially in the Faculty of Law, but also on all the Universities of Scotland. His published works have at the same time made his name known throughout Europe as an authority on the subject of which he was Professor. By his kindness and genial disposition, Professor Lorimer endeared himself to his colleagues and to the students, by whom he will be held in affectionate remembrance.

"The University Court unite in sympathy and condolence with his widow and family, and request the Secretary to send a copy of this Minute to Mrs Lorimer as an expression of their feelings."

The Deed of Factory and Commission in favour of Mr John Cook, W.S., and Mr Henry Cook, W.S., as Joint-Factors for the University, was signed, and sealed with the Common Seal of the Court.

It was ordered that a communication should be made to the Scottish Universities Commissioners, that the Court intended to submit to them draft ordinances relating to the University of Edinburgh, under the provisions of the Universities (Scotland) Act, 1889.

It was remitted to the Business and Law Committee, with Professor Sir William Turner, to consider the subjects in which draft ordinances should be framed, and to prepare draft ordinances to be submitted to the Court.

Consideration was resumed of the Minute of the General Council in favour of Professional Oral Examinations being open to members of the General Councils of the Universities of Scotland, and in connection therewith there was considered a Minute of Senatus on the subject. The following decision was adopted :—"The University Court approve of a well-regulated publicity in the case of the Professional Oral examinations ; and while they cannot accept the proposal of the General Council in its present form, they are prepared to consider any further suggestions that may be laid before them by the Council."

Copies of a representation to the Scottish Universities Commissioners on behalf of the Edinburgh University Union, received from the Union Committee, were remitted to the Business and Law Committee for report.

The death of Dr David Page, Additional Examiner in Medical Jurisprudence, was reported. It was resolved that the Examiner in this department in future should also be the Additional Examiner for the Second Bachelor of Science Examination in the Department of Public Health, with an addition to his salary of £15 a year. It was resolved to make an appointment to the vacant office at the stated meeting in April, and instructions were given that the usual advertisements should be made.

On the recommendation of the Council on Education of the Highland and Agricultural Society of Scotland, Mr Gilbert Murray was reappointed Additional Examiner in Agriculture for three years from the 1st of January last; and on the recommendation of the Senatus, Principals Williams and Walley were reappointed Additional Examiners in Veterinary Hygiene, and Dr John Voelcker Additional Examiner in Agricultural Chemistry, all from the same date.

A Report by the Faculty of Advocates on Education in Law, received from the Faculty, was remitted to the Business and Law Committee.

There was laid before the Court copy of a Deed of Endowment of a Lectureship in Agriculture, founded by Miss Steven of Ballahouston, and endowed with the sum of £3000 by her. This gift was gratefully accepted by the Court on behalf of the University.

On consideration of a Minute of Senatus, it was resolved to sanction for the present the following Fees in the Department of Engineering—For Laboratory work, £10, 10s. in the Winter Session, and £6, 6s. in the Summer Session. For Practical Classes—Senior Class, £6, 6s.; Junior Class, £2, 2s. The opening of the necessary Classes was authorised.

Amended Rules for Graduation in Public Health, as proposed by the Senatus to meet the requirements of the General Medical Council of the United Kingdom, were considered and approved; and it was ordered that they should be proceeded with as a Regulation under section xii. (2) of the Universities (Scotland) Act, 1858.

An application by the Edinburgh and District United Trades Council for the use of a room in the evening for a course of Lectures by the University Extension Lecturers was granted.

An application on behalf of the Chelsea Military Exhibition for the loan of some old military musical instruments in the Reid Music-room Museum was granted.

It was resolved to request the General Council to furnish to the Court an estimate of their probable expenditure for the remainder of the financial year ending 31st August next.

It was resolved to submit to the Scottish Universities Commissioners a claim to a share in the increased Parliamentary Vote to the Scottish Universities under the Act of 1889, so long as the

additional vote is not permanently apportioned to the Universities by the Commissioners.

On consideration of a Minute of Senatus and a recommendation of the Finance Committee, the following grants for apparatus were made:—

For Class Instruction, from Gilchrist Fund — Professor Ewart, £15; Professor Annandale, £15; Professor T. R. Fraser, £6, 10s.; Professor Chiene, £13; Professor Geikie, £8, 12s. 6d.; and Mr George Brook, £20—total, £78, 2s. 6d. From General University Fund—Professor Grainger Stewart, £21, 10s.; Professor Rutherford, £48, 4s.; Professor Greenfield, £50, 14s.; Professor Ewart, £6—total, £126, 8s.

For Examination purposes. From General University Fund—Professor Ewart, £12.

It was agreed that £500 should be added to the Insurance against fire on the buildings of the Reid Music-room, and £500 on the contents of the Library and Museum therein.

Arrangements by the Senatus, under which the Class of Civil Law has been taught, since the death of Professor Muirhead, by Professor Kirkpatrick, were approved. A scheme of division of the emoluments of the Chair submitted by the Senatus was also approved.

Arrangements by the Senatus under which the class of Public Law has been taught, since the death of Professor Lorimer, by the Rev. William Hastie, B.D., were approved; and a honorarium of £26, 5s. was granted to him for continuing the work of the class during the usual additional period voluntarily undertaken by Professor Lorimer, but for which he was not responsible.

It was agreed to grant a honorarium of £5, 5s. to Mr G. Gregory Smith for acting as judge of the essays for the Rector's prize.

On consideration of a Minute of Senatus, and a recommendation by the Finance Committee, it was resolved that a sum of £112, 6s. 6d., received from friends of the Scottish Universities resident in India, should be added to the capital of the "William Dickson Travelling Fund."

On consideration of a Minute of Senatus, and a recommendation by the Finance Committee, it was agreed to grant a fee of £5, 5s. to Mr Charles Hunter Stewart, M.B., D.Sc., for assistance to be given at the next laboratory Examination for Graduation in Public Health. It was at the same time resolved that any Additional Examiner required in the Public Health Department in future should be appointed after advertisement in the usual way.

The Baxter Faculty of Arts Fund Accounts for the period from 16th September 1889, to 6th January 1890—the date of the closing of the separate Factory held by the Secretary for managing this Fund—were submitted as audited. The Auditor's report bore that they were cor-

rectly stated and properly vouched and instructed. They were remitted to the Finance Committee for examination.

MONDAY, 14TH APRIL 1890.—Letters from the Board of Agriculture were submitted, intimating a grant of £100 in aid of the Lectureship on Forestry for the current year.

Instructions were given for the completion of the transfer of some of the University investments to the new University Court.

Dr J. W. Taylor, Scarborough, was appointed Examiner in Medical Jurisprudence and in Public Health (Public Health subjects of the second B.Sc. examination). The appointment is for the current year, but may be held by annual reappointment for five years.

The Court sanctioned an expenditure not exceeding £80 for the expenses of the General Council of the University for the rest of the current financial year.

Accounts were passed for payments on account of the Senatus, University works, and the Court.

Payments on account of the Fulton Laboratory since last meeting were reported.

Payment of grants awarded by the Senatus from the William Dickson Travelling Fund was approved as follows:—Duncan Mackenzie, £30; William Thomson, M.A., £25; G. W. Wilton, B.L., £30. Intimation was at the same time received that a grant from this fund to Colin Gordon, M.B., had been resigned.

Awards by the Senatus of the Hope Chemistry Prize to William Cossar Mackenzie, B.Sc., and Thomas Rhymer Marshall, D.Sc., were reported. It was also reported that payment to them had been authorised by the Finance Committee.

An award by the Senatus of the Hope Prize Scholarship from 1st August 1889 to Thomas S. Murray, in place of William Cossar Mackenzie, B.Sc., who resigned it, was reported. It was also reported that payment had been authorised by the Finance Committee.

An award by the Senatus of the Grierson Bursary in the Faculty of Law to Mr J. Taylor Cameron was reported. It was also reported that payment had been authorised by the Finance Committee as from Martinmas last.

Expenditure on fittings and furniture for the Sanskrit Class-room, Matriculation office, and Court office, and on cleaning and painting in the Chemistry department, was sanctioned.

A bond for the fund for endowing the Gunning Jubilee Medical Prizes, which was delivered on certain conditions, was submitted. The Bond was gratefully accepted on the conditions referred to.

Draft Ordinances on the use of Court Seal, on the making of Payments and Investments, and on the time within which Appeals to the Court from the Senatus should be allowed, were provisionally approved,

and it was ordered that they should be communicated to the Senatus in terms of the Universities (Scotland) Act, 1889. Subjects for other draft ordinances were reported on and discussed, and they were remitted to a Committee for consideration, with power to frame Draft Ordinances on the subjects referred to, or any other subjects, for the consideration of the Court.

It was resolved that the framing of a Draft Ordinance on Graduation in Medicine should be delayed till after the meeting of the General Medical Council in May; and that a request should be made to the Scottish Universities Commissioners to extend the time for lodging a Draft Ordinance on that subject.

Proposed Regulations for the Curriculum in Arts and the ordinary M.A. Degree, submitted by the Senatus, were, together with relative statements by the Professors of Agriculture and Commercial and Political Economy, remitted to the Committee on Draft Ordinances before referred to.

Regulations for a Curriculum and for Graduation in Music, submitted by the Senatus, were remitted to the same committee.

Mr Murray, Dr Duncan, and Professor Crum-Brown were appointed to be three of the members of the Electing and Governing Body for the Steven' Lectureship in Agriculture, required by the deed of endowment. The members *ex officio* are the Principal and the Professor of Agriculture.

On consideration of a letter from Professor Dittmar, authority was given for the removal of his name from the list of recognised Teachers of Medicine for the present, as requested by him.

Appendix.

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I.—UNIVERSITY LOCAL EXAMINATIONS.

The BOARD grant Local Examination Certificates of two grades viz., JUNIOR and SENIOR, the Examinations for which are as nearly as possible on the same level as the Government Lower and Higher Grade Examinations.

The subjects of examination are divided into three classes,—PRELIMINARY SUBJECTS, SPECIAL SUBJECTS, and EXTRA SUBJECTS.

The Preliminary subjects, in which *all* Candidates must undergo Examination, are—English, History and Geography, Latin (optional for females), Arithmetic, Scripture History (which may be omitted, and a paper in French Accidence taken instead).

The Special subjects (of which any two, except in Department E, but not more than four, may be taken at one Examination) are—(1) for Junior Certificates: Department A. Latin, Greek, French, German. B. English, History and Geography, Scripture History. C. Mathematics, Natural Philosophy, Physical Geography. (2) For Senior Certificate: A. (as above), B. English, History and Geography, Logic, Bible Knowledge. C. Mathematics, Natural Philosophy. D. Chemistry, Zoology, Botany, Physiology, Geology. E. Arithmetic, Commercial History and Geography, Elements of Economics, and either French or German. In Department E. all the subjects must be taken before a Special Certificate is granted.

The Extra Subjects (optional) for both Certificates are Drawing and Music.

These Examinations have been instituted to supply a common test of attainment both for pupils of public schools and for those privately educated. They are held annually, early in June, at various local centres in Scotland, England, Ireland, and also abroad. They are open to boys and girls without restriction as to age.

Candidates may offer themselves for Examination in the Preliminary Subjects alone, and afterwards for the Special and Extra Subjects of the Junior or Senior Certificate; or, they may take the Preliminary, Special, and Extra Subjects, for either Certificate, at one Examination. They may afterwards add to the value of the Certificate by taking one or more subjects. There are in connection with these Examinations seven Bursaries restricted to girls, two to boys, and one open to boys and girls.

PRIVILEGES ATTACHING TO THE SENIOR CERTIFICATE.

1. This Certificate, when it bears that the holder has passed in Latin, Greek, and Mathematics, entitles the holder to enter the University for the *Curriculum of Three Sessions in Arts without further examination*. It is thus equivalent to a recognised *Schools-Leaving Certificate* for the Universities of Scotland.

2. These Certificates, both Junior and Senior, exempt from the Medical Preliminary Examinations, in so far as they include the subjects required by the Council, and they are accepted also by the University of Edinburgh.

3. Ladies who hold the Senior Certificate are exempted from the Entrance Examination for Girton College, Cambridge.

4. Holders of the Senior Certificate above eighteen years of age are recognised as Assistants in State-aided schools.

The Board publishes a Report of the Examinations annually, containing copies of the Examination papers, classified lists of the successful Candidates, and Regulations for the following year. Copies of the Regulations, &c., may be had on application to the Clerk of Senatus.

H. CALDERWOOD, LL.D., } *Joint*
S. S. LAURIE, LL.D., } *Secretaries.*
WILLIAM MITCHELL, M.A., *Assistant Secretary.*

II.—UNIVERSITY CERTIFICATES IN ARTS FOR WOMEN.

I. Candidates, before they can receive Certificates, must have studied in *at least three* of the Classes of the "Edinburgh Association for the University Education of Women," that are recognised by the Senatus Academicus; and they must also have passed the Senior Local Examinations of the University of Edinburgh, or of one of the other Scottish Universities, or of the Universities of Oxford or Cambridge.

II. Candidates who have passed any of the aforesaid Local Examinations may present themselves at the Edinburgh University Examinations for the Certificate in Arts, either in *April* or in *October*—in the subjects of any one or more, or of all of the Classes attended by them. After they have passed in not less than three subjects, they are entitled to receive a University Certificate in Arts.

III. The Classes at present sanctioned and approved by the University are the following:—*Department of Languages and Literature*—English Literature, Latin, Greek, Biblical Criticism, Science and History of Language; *Department of Philosophy*—Logic and

Mental Philosophy, Moral Philosophy, Political Economy, Theory of Education, Fine Art; *Department of Mathematics and Physical Science*—Mathematics, Experimental Physics, Chemistry, Geology, Botany, Zoology, Physiology, and Science of Language.

IV. The University Certificates in Arts for Women are of two grades —Pass Certificates and Honour Certificates.

V. Honour Certificates in Arts are awarded to those Candidates who, having passed a satisfactory Examination in at least three subjects, have, in a farther and Special Examination for Honours, exhibited high proficiency in any *one* of these three subjects.

VI. Candidates for the *Local Examinations* of the University, which are held annually in June, may obtain, on application to the Clerk of Senatus, University, Edinburgh, printed forms, which are required to be filled up and returned to him, with the fees, on or before 13th May.

VII. Candidates for *Ordinary* and for *Honour* University Certificates in Arts must send their names and addresses, and the subjects in which they wish to be examined, to the *Clerk of Senatus*, together with the fee and proof that they have passed the Local Examinations—before the 13th March or the 1st October in each year.

VIII. The fee for the *Senior Local Examinations Certificate* is £1, 10s., and that for the *University Certificate in Arts* two guineas—to be paid to the Clerk of Senatus. No additional fee is required for an Honour Certificate.

PASS CERTIFICATE.

In accordance with the Regulations for "University Certificates in Arts for Women," the following days and hours are fixed for Examinations for the PASS CERTIFICATE, viz., in October 1890:—

Tuesday,	14*th October* .	Latin (9-11, and 11.30-1.30); Mathematics (2.30-4.30).
Wednesday,	15*th October* .	Mathematics (9-11); Greek (11.30-1.30, and 2.30-4.30).
Thursday,	16*th October* .	Logic and Mental Philosophy (9-12); Experimental Physics (1-4).
Friday,	17*th October* .	Moral Philosophy (9-12); English Literature (1-4).

And in April 1891:—

Monday,	6*th April* .	Latin (9-11, and 11.30-1.30); Mathematics (3-5).
Tuesday,	7*th April* .	Mathematics (9-11); Greek (11.30-1.30, and 2.30-4.30).

Wednesday, 8th April	Logic and Mental Philosophy (9-12); Experimental Physics (1-4).
Thursday, 9th April	Moral Philosophy (9-12); English Literature (1-4).

The above are the Seven Subjects of Examination necessary for the Degree of Master of Arts.

The days and hours of Examination, in October and April, for Candidates who may select a subject not included in the above subjects, will be arranged after Candidates have given in their names.

The heads of Examination in October 1890 and April 1891 are :—

Latin.—Horace, *Odes*, iii., iv.; *Epistles*, ii., and *Ars Poetica;* Virgil, *Eclogues, Georgics*, i., ii.; Cicero, *Philippic*, ii.; Tacitus, *Annals*, xiv. A passage from a Latin Author not prescribed. Latin prose composition. *Roman History*—A general knowledge of the History of the Republic, and a special knowledge of the periods embraced in the books prescribed. *Roman Literature*—A general knowledge of the course of Roman Literature till the end of the Augustan age, and a more special knowledge of the lives and works of Virgil, Horace, Cicero, and Tacitus. *Translation from English into Latin prose is required of every Candidate.*

Greek for October 1890 *and April* 1891.—Homer, *Odyssey*, iv.; Aeschylus, *Agamemnon;* Demosthenes, *De Corona.* A passage from a Greek Author not prescribed. Greek prose composition. *Greek History.*—A general knowledge of Greek History to the death of Alexander, and a more minute knowledge of the period embraced by the life of Demosthenes. *Greek Literature.*—The works of the prescribed Authors. Laws of Hexameter and Iambic verse.

Psychology and Logic.—The Class Lectures in Logic and Psychology. Fowler's *Deductive Logic* and *Inductive Logic.* The Professor's "Locke" in *Philosophical Classics* (Blackwood); *Selections from Berkeley* (third edition),—Editor's "Introduction;" "Principles of Human Knowledge," (Part I. sect. 1-84); "Divine Visual Language: A Dialogue," with the Prefatory Notes (pp. 3-7; 147-153; 309-12), and the footnotes to the "Principles" and to the "Dialogue."

Moral Philosophy.—The Class Lectures—"Handbook of Moral Philosophy;" Butler's Sermons, i., ii., iii., xi.; Sidgwick's "Outlines of the History of Moral Philosophy," chaps. ii. and iv.

Political Economy.—Fawcett's *Manual*, and the Lectures of the Professor.

English Literature.—Class Lectures of the Course attended. History of the English Language: the first Five Chapters of Morris's "Historical Outlines of English Accidence." History of English Literature, more particularly from 1350 to 1688: Morley's Text-Book, and the portions of Hallam's "Literature of Europe" that relate to English writers of the times mentioned. Special Readings required :—Shake-

speare's *Tempest* and *Julius Cæsar ;* Milton's *Areopagitica* and Books i. and ii. of *Paradise Lost ;* Johnson's *Life of Cowley ;* Wordsworth's *Prose Prefaces, &c., to his Poems.*

Mathematics—Arithmetic. Euclid, Books i., ii., iii., iv., and vi., or their equivalent. Algebra, to Quadratic Equations, including the Progressions.

Experimental Physics.—The Class Lectures.—Balfour Stewart's *Elementary Physics.*

Chemistry.—The Class Lectures—Bloxam's *Chemistry.*

Geology.—The Class Lectures—Geikie's *Outlines of Geology.*

Botany.—The characteristic features of the following groups and classes of the Plant Kingdom : — Thallophyta [Algæ, Fungi], Muscineæ [Hepaticæ, Musci], Pteridophyta [Filicineæ, Equisetineæ, Lycopodineæ], Phanerogamæ [Gymnospermæ, Angiospermæ (Monocotyledones, Dicotyledones)]. The characters of the Natural Orders, Ranunculaceæ, Cruciferæ, Leguminosæ, Rosaceæ, Umbelliferæ, Compositæ, Labiatæ, Urticaceæ, Orchidaceæ, Liliaceæ, Gramineæ, Coniferæ. The fundamental facts of Morphology and Physiology as they are illustrated in the life histories of :—Bacterium, Saccharomyces, Mucor, Vaucheria, Eurotium, Funaria, Aspidium, Pinus, Scilla, Helianthus. Prantl and Vines' "Text-Book of Botany ;" Bower and Vines' "Practical Botany."

Zoology.—(*a.*) The Principles of Classification, and the distinctive characters of the Classes of the Animal Kingdom. (*b.*) The principles of Geographical Distribution of Animals, and a general knowledge of the Geographical Distribution of the Mammalia. (*c.*) The structure and habits of the following forms :—Amœba, Hydra, Actinia, Asterias, Lumbricus, Anodonta, Sepia, Homarus, Blatta, Ascidia, Gadus, Rana, Lacerta, Columba, Ornithorhynchus, Macropus, Lepus. (*d.*) The Life-History of Aurelia, Ascidia, and Rana. *Text-Books*—Lloyd Morgan's "Biology," and Packard's "Zoology."

Physiology.—The Class Lectures—Huxley's *Physiology.*

Biblical Criticism.—Class Lectures for One Session : Apocryphal Gospels— Hammond's *Outlines of Textual Criticism applied to the New Testament* (or Scrivener's *Introduction* so far as regards MSS. and Versions).

Science of Language.—The Class Lectures.

HONOUR CERTIFICATE.

The following days are appointed for Examinations for Honour Certificates, when any who have passed the Ordinary Examinations in *at least three Subjects* may present themselves. Candidates may select, as the Subject of an Honour Examination, any *one* of the three Subjects in which they have passed the Ordinary Examination. (See Regulation V.)

Latin—10th April, 9 to 12, and 1 to 4; 11th April, 9 to 12. *Greek*—11th April, 1 to 4; 13th April, 9 to 12, and 1 to 4. *Logic and Metaphysics*—10th April, 9 to 12, and 1 to 4; 11th April, 9 to 12. *Moral Philosophy*—11th April, 1 to 4; 13th April, 9 to 12, and 1 to 4. *Mathematics*—10th April, 9 to 12, and 1 to 4. *Natural Philosophy*—11th April, 9 to 12, and 1 to 4.

The days and hours of Examination for any subject not included in the above will be arranged after Candidates have given in their names.

The heads of Examination are as follows:—

Latin for April 1891.—Lucretius, i., ii., iii., v.; Virgil, *Eclogues and Georgics;* Horace; Cicero, *Epist. ad Famil*, v.-viii.; *Orationes, Pro Murena, Pro Cn. Plancio, Pro P. Sestio;* Tacitus, *Annals*, i.-vi.; Latin prose composition; Translation from Authors not prescribed. *Roman History.*—From B.C. 90 to A.D. 37; A general knowledge of the previous history will be expected. *Roman Literature.*—A general knowledge of the course of Roman Literature, and a more minute knowledge of the Authors prescribed.

Latin for April 1892.—Plautus, *Pseudolus, Rudens;* Terence, *Phormio;* Horace; Juvenal, with omission of ii., vi., ix.; Martial, Selections for the Use of the Humanity Classes, i., ii., ix.-xii.; Cicero, *Epistolæ ad Q. Fratrem ad Atticum*, i.-iv., and vii., viii.; Tacitus, *Annals*, xi.-xvi.; Latin prose composition, and translation from Authors not prescribed. *Roman History*—First century, B.C. and first century A.D. A general knowledge of the previous history will be expected. *Roman Literature*—A general knowledge of the course of Roman Literature, and a more minute knowledge of the Authors prescribed.

Greek for April 1891.—Homer, *Iliad*, xiii.-xxiv.; Pindar, *Olympian and Pythian Odes;* Thucydides, Books v.-vii. (inclusive); Plato, *Gorgias* (Thompson's Edition); Aristotle, *Poetics* (Vahlen's text); Greek Prose Composition; Translation from Authors not prescribed. *Greek History.*—A general knowledge of Greek History to the death of Alexander, and a minute knowledge of the period embraced by the Peloponnesian War. *Greek Literature.*—A general knowledge of the course of Greek Literature, with a more minute knowledge of the Authors prescribed. The principles of Comparative Philology as applied to Latin and Greek. Text-book recommended, "Sounds and Inflexions in Greek and Latin," by King and Cookson.

Greek for April 1892.—Homer, *Odyssey*, i.-xii.; Sophocles, *Œdipus Col.* and *Antigone;* Theocritus; Thucydides, Books vii., viii.; Plato, *Gorgias* (Thompson's Edition); Aristotle, *Poetics* (Vahlen's text). Greek Prose Composition; Translation from Authors not prescribed. *Greek History.*—A general knowledge of Greek History to the death of Alexander, and a minute knowledge of the period embraced by the Peloponnesian War. *Greek Literature.*—A general knowledge of the course of Greek Literature, with a more minute knowledge of the Authors prescribed. *Greek Grammar.*—As a special subject *Monro's* Homeric Grammar; The principles of Comparative Philology as

applied to Latin and Greek. Text-book recommended, "Sounds and Inflexions in Greek and Latin," by King and Cookson.

Logic and Metaphysics.—The Lectures, including those in the Class of Metaphysics; The Professor's "*Berkeley*," in "Philosophical Classics" (Blackwood); also the "*Selections*" (third edition); Plato, *Theætetus;* Descartes, *Meditations;* Locke, *Essay on Human Understanding*, in connection with "Locke" in "Philosophical Classics" (Blackwood); Hume, *Inquiry concerning Human Understanding;* Kant, *Critique of Pure Reason;* Hegel in "Philosophical Classics" (Blackwood). Exercises in Hamiltonian as well as in the ordinary logical forms. A competent knowledge of the History of Philosophy.

Moral Philosophy.—The Class Lectures for Advanced Students. Plato, *Republic*, i.-vii.; Aristotle, *Ethics* (omitting v., vi., vii.); Spinoza, *Ethics;* and Reid's *Active Powers*, Ess. ii., iv., v.; Kant, *Metaphysic of Ethics;* Hegel's *Philosophy of the State* (Griggs's *German Philosophical Classics*); Sidgwick, *Methods of Ethics*, Books iii. and iv.; Green's *Prolegomena.*

English Literature.—(*a.*) History and Structure of the English Language: Morris's *Historical Outlines of English Accidence*, first Five Chapters, with Chapter XII. (entitled "Pronouns"), and Appendices I. and III. (*b.*) History of English Literature, more particularly from 1250 to 1400, and from 1580 to 1688: Craik's larger *History of English Literature* and Taine's *History of English Literature* recommended, in addition to readings in the chief authors of the two periods mentioned. (*c.*) Special Readings required:—Spenser's *Faery Queene*, Book I. (Clarendon Press Edition); Bacon's *Advancement of Learning* (Clarendon Press Edition); Shakespeare's *Tempest* and *Julius Cæsar;* Milton's *Lycidas* and *Samson Agonistes;* Johnson's Life of Pope; Wordsworth's Prose Prefaces, Appendix, &c., to his Poems; Tennyson's *Maud* and *In Memoriam*. (*d.*) English Composition.

Mathematics.—Euclid, I., II., III., IV., VI., and XI., or their equivalent; The advanced portions of the Elements of Algebra; Trigonometry; and Conic Sections, treated geometrically and analytically.

Experimental Physics.—A general knowledge of the subject, such as may be acquired from Stewart's *Elementary Physics*, or from Lectures of the Three Year Course. In addition, Maxwell's *Heat*, or Tait's *Properties of Matter.*

Chemistry.—Bloxam's *Chemistry.*

Geology.—J. Geikie's *Outlines of Geology;* Lyell's *Principles of Geology.*

Botany.—Consult Professor as to books.

Physiology.—Candidates will be examined on all the subjects treated of in Kirke's "Physiology," except the Physiology of the Reproductive Organs and Development.

Biblical Criticism.—Candidates who desire Honours in these subjects may consult the Professors as to Books, &c.

Science of Language.—The Class Lectures.

Candidates who propose to present themselves at the Ordinary Examinations in October 1890 must intimate their names and addresses to the "*Clerk of Senatus, University of Edinburgh*," before the 1st of October; and at either the Ordinary or the Honour Examinations in April 1891, before the 13th of March—specifying the Subject or Subjects in which they offer themselves, and also the Classes which they have attended, with the Sessions in which they have done so. The Fee should be paid when the Candidate announces her name.

Evidence of having passed the Local Examinations, and also certificates of the necessary attendance in the Classes of the "Association for the University Education of Women" must be produced in the Examination Room when the candidate appears to be examined.

A. CAMPBELL FRASER, D.C.L., LL.D.
Dean of the Faculty of Arts.

THE FOLLOWING OBTAINED CERTIFICATES IN ARTS IN APRIL 1890:—

HONOUR CERTIFICATES.

LILIAS MAITLAND—*First Class*, Logic and Mental Philosophy.
MARY B. DOUIE—*Second Class*, Logic and Mental Philosophy.
FRANCES H. SIMSON—*First Class*, Latin.
AGNES K. RUDD—*Second Class*, Mathematics.

PASS CERTIFICATES.

A. MAY GIBB—Mathematics, Moral Philosophy, and Natural Philosophy.
ELIZABETH MACDONALD—English Literature, Latin, and Logic and Mental Philosophy.
JESSIE C. MACDONALD—English Literature, Philology, and Geology.
ANITA M. MACHATTIE—English Literature, Logic and Mental Philosophy, and Moral Philosophy.
RACHEL C. MACKENZIE—Mathematics, Latin, and Natural Philosophy.
MARION J. NEWBIGIN—English Literature, Moral Philosophy, and Geology.
ELIZABETH S. NORRIE—English Literature, Latin, and Logic and Mental Philosophy.
KATHERINE M. STEWART SANDEMAN—English Literature, Logic and Mental Philosophy, and Moral Philosophy.
MARION S. STEVENSON—Logic and Mental Philosophy, Moral Philosophy, Natural Philosophy, and Geology.
ELIZABETH THOMPSON—English Literature, Latin, and Moral Philosophy.
MARY WRIGHT—Moral Philosophy, Botany, and Geology.

III.—THE EDINBURGH UNIVERSITY LECTURE-EXTENSION ASSOCIATION.

The object of this Association is to provide short courses of Lectures of an Academic character for the benefit of persons unable to attend the University itself. Full particulars and copy of Annual Report on application to the Secretaries.

President.—Sir Thomas Clark, Bart.

Committee of Management.—*Chairman*—Principal Sir William Muir. *Vice-Chairman*—Professor S. S. Laurie. Professors Crum Brown, Calderwood, Masson, Butcher, Flint, Nicholson, Kirkpatrick, Geikie; Sheriff Mackay, LL.D.; R. Vary Campbell, Esq., Advocate; Robert Cox, Esq., M.A., F.R.S.E.; John Harrison, Esq.; James Oliphant, Esq., M.A.; J. R. Findlay, Esq.; J. A. Wenley, Esq.; Miss Louisa Stevenson; James Tod, Esq.; Walter Thorburn, Esq., M.P.

Lecturers and Subjects.

All Professors of the University are entitled to deliver such courses when willing to do so. Secretaries of Local Committees, when desirous of securing the services of Professors, are requested to communicate with the Association on the subject.

R. E. Allardice, M.A., *Mathematics;* A. M. Anderson, M.A., LL.B., *History;* H. Bellyse Baildon, M.A. (Cantab.), *English Literature;* Mark G. Davidson, M.A., LL.B., *Political Economy;* John Downie, M.A., *History;* A. C. Elliott, D.Sc., *Physics;* R. W. Felkin, M.D., *Anthropology;* W. E. Fothergill, M.A., B.Sc., *Botany;* J. M. Gray, F.S.A., *Fine Art;* F. R. Jamieson, M.A., *Roman Literature;* J. M. Irvine, M.A., B.Sc., *Political Economy;* Jules A. L. Kunz, *French Language and Literature;* W. Mitchell, M.A., *Logic, Psychology, and Moral Philosophy;* H. R. Mill, D.Sc., *Geography and Physiography;* A. A. Murray, M.A., LL.B., *Political Economy;* W. Peddie, D.Sc., *Physics;* Franklin Peterson, *Music;* Albert von Ravensberg, *German Language and Literature;* F. F. Roget, Grad. Univ. Geneva, *French Literature;* J. A. Smith, B.A. Oxon., M.A. Edin., *Greek Literature;* G. Gregory Smith, B.A. Oxon., M.A. Edin., *Literature and Modern History;* Otto Schlapp, Ph.D., *German Literature;* J. Arthur Thomson, M.A., *Zoology;* D. J. Vallance, *Fine Art.*

For further particulars apply to

H. Bellyse Baildon, M.A., } *Honorary*
G. Gregory Smith, M.A., } *Secretaries.*

IV.—CIVIL SERVICE OF INDIA EXAMINATIONS.

The University of Edinburgh now being one of those Institutions selected by the Secretary of State for India, in which Candidates for the Civil Service of India may pass their probation, arrangements have been made by the Senatus for the accommodation of selected candidates. Such selected candidates will be under the supervision of the Principal and Deans' Committee.

The Civil Service Commissioners have been requested to inform Candidates for the Indian Civil Service, that "in the event of their being appointed to the Service, a clause will be introduced into their Covenants by which they will bind themselves to agree to such Regulations for the provision of pensions for their families as may be approved by the Secretary of State for India in Council."

The Examinations are held early in June annually, and are open to all natural-born subjects of Her Majesty, above seventeen years and under nineteen years on the 1st January preceding, who are of sound constitution and good moral character. The fee for the Examination is £5.

The Examination embraces :—English Composition ; History and Literature ; Greek ; Latin ; French ; German ; Italian ; Mathematics ; and any two of the following Sciences, viz. :—Chemistry ; Electricity and Magnetism ; Experimental Laws of Heat and Light ; Mechanical Philosophy, with outlines of Astronomy ; Logic ; Elements of Political Economy ; Sanskrit ; Arabic.

Candidates are at liberty to name any or all of these branches of knowledge. No subjects are obligatory.

Selected Candidates, before proceeding to India, will be on probation for two years, during which time they will be examined periodically, with a view of testing their progress in the following subjects :—Law ; Classical Languages of India, viz.—Sanskrit, Arabic, Persian ; Vernacular Languages of India ; History and Geography of India ; Political Economy.

Examinations will be held at the close of the second year of probation, at which it will be decided whether a selected Candidate is qualified for the Civil Service of India. *At this Examination Candidates will be permitted to take up any one of* the following branches of Natural Science, viz. :—Agricultural Chemistry, Botany, Geology, or Zoology.

Candidates will be tested during their probation as to their ability to perform journeys on horseback ; and no Candidate will be deemed qualified for the Civil Service of India who fails to satisfy the Civil Service Commissioners of his competence in this respect.

Persons desirous to be admitted as Candidates may obtain all necessary information from "The Secretary, Civil Service Commission, London, S.W.," who will supply forms of application at any time after the 1st December for the Examination following. The forms must be returned on or before 31st March.

V. — EXAMINATIONS FOR CANDIDATES FOR THE ARMY.

In the Explanatory Memorandum of the Secretary for War, to accompany the Royal Warrant (of 30th October 1871) regulating first appointments, regimental promotion, &c., in the Army, it was announced that "A certain number of Sub-Lieutenancies a year will be allotted to Candidates who have passed the University Examination specified in the Regulations. If they also pass the Examination for the degree of B.A., they will be allowed two years' extension of the limit of age. University Candidates will be required to give at least six months' notice of their desire to be admitted into the Army. If in any year there should be more Candidates than appointments, the requisite number will be chosen by competition between the Candidates; after their appointment they will go through the same course as other Sub-Lieutenants."

In subsequent communications from the War Office it has been announced that "The Examination for M.A. at a Scottish University will be considered tantamount to passing that of B.A. at an English or Irish University;" and that "the Secretary of State for War has accepted an examination at the Scottish Universities, to be defined as 'The Examination for Candidates for the Army,' as equivalent to the examination at the English and Irish Universities for similar candidates, and that the age of such candidates may be extended to 21 years. This examination will consist of any three out of the seven examinations required for the degree (M.A.) at the University of Edinburgh; but one subject out of each of the three separate Departments will have to be taken up."

In conformity with the above regulations of the War Office—1st, all who have passed the Examination for the degree of M.A. will be eligible for Commissions in the Army, and will be allowed two years' extension of the ordinary limit of age. 2nd, Those Students who have not passed the M.A. Examination may receive Certificates qualifying them for Commissions in the Army (provided they be not more than 21 years of age) on having attended one class in each of the three Departments of the M.A. curriculum,—that is to say (*a*) either one Greek or one Latin class; (*b*) either Logic, Moral Philosophy, or Rhetoric and English Literature; (*c*) either Mathematics or Natural Philosophy,—and on passing the M.A. Examination, in either April or October, in those three subjects in which the Candidate has attended classes.[1]

The names of intending Candidates for Certificates must be given in and fees paid at the *Matriculation Office* at the same time as those of Candidates for the M.A. Examinations.

The Fee for the Examination is two guineas.

Candidates may be exempted from the Preliminary Examination in all subjects except geometrical drawing, if they can produce a certificate

[1] See Regulations for Degree of M.A.

of having passed the Preliminary Examination in general education required of Candidates for graduation in Medicine at the University of Edinburgh, when the Candidate has passed in all the subjects of the Army Preliminary Examination at not more than two examinations.

VI.—SYLLABUS OF SUBJECTS OF EXAMINATION FOR STUDENTS OF DIVINITY AND CANDIDATES FOR LICENCE BY PRESBYTERY OF EDINBURGH.

*** *The Examinations shall be conducted mainly in writing.*

An average of not less than 40 *per cent. over all the subjects, and a minimum of* 30 *per cent. in each shall be necessary to a pass, except in Biblical Knowledge, in which* 50 *per cent. shall be the minimum.*

The Examinations, by the favour of the Senatus, will be held in the Examination Hall of the University.

I.—FOR STUDENTS ENTERING THE DIVINITY HALL.

1. BIBLICAL KNOWLEDGE.—Genesis to 2 Samuel, and the Four Gospels.
2. THE SHORTER CATECHISM.

II.—FOR STUDENTS ENTERING UPON THEIR SECOND YEAR.

1. LATIN.—Augustine—Enchiridion.
2. GREEK.—The Epistle to the Colossians as in Lightfoot.
3. HEBREW.—Davidson's Grammar, 1-31; Genesis, i.-ix.
4. DIVINITY.—Confession of Faith, 1-15; Flint's Theism; Row's Manual of Christian Evidences.
5. BIBLICAL KNOWLEDGE.—1 Kings to Nehemiah, and Acts of the Apostles.
6. CHURCH HISTORY.—History of the Church to 325 A.D.

III. FOR STUDENTS ENTERING UPON THEIR THIRD YEAR.

1. LATIN.—Anselm—Cur Deus Homo.
2. GREEK.—St John's Gospel to be read critically, with discussions as to date and authorship.
3. HEBREW.—Davidson's Grammar, 32-49; Psalms i.-xv.
4. DIVINITY.—Confession of Faith, 16-33; The Trinity; The Person of Christ.
5. BIBLICAL KNOWLEDGE.—The Mosaic Ritual and the Prophets.
6. CHURCH HISTORY.—The Reformation Period, with special reference to Scotland.

By Act of Assembly XX., 1889, all Students of Theology who have completed the prescribed course of Theological instruction shall, before applying to any Presbytery to be taken on trials for licence, be examined by the Synodical Committees already existing for examination of Students entering the Divinity Hall. The Convener of the Edinburgh Synodical Committee is the Rev. Dr Alison, who will give the necessary information.

VII.—UNIVERSITY SOCIETIES AND CLUBS.

i.—THE AGRICULTURAL SOCIETY.

ESTABLISHED 1858.

Honorary President—Professor Wallace. *President*—John K. Borland. *Vice-President*—John Murray. *Secretaries*—H. W. Joyce, T. J. Young *Treasurer*—H. Crabtree.

This Society meets weekly during the Winter Session at 8 P.M.

ii.—ARTS STUDENTS' CHRISTIAN ASSOCIATION.

Honorary President—Rev. Alexander Martin, M.A. *Hon. Vice-Presidents*—Professor Calderwood, Professor Campbell Fraser, Professor Butcher, Rev. Professor Marcus Dods, D.D.; Rev. A. Wallace Williamson, M.A.; Rev. Douglas Mackenzie, M.A. *President*—R. M. Robertson. *Senior Secretary*—J. E. Mackay, 19 Marchmont Crescent. *Treasurer*—John Burn. *Junior Secretary*—T. Grahame Bailey, 17 Glengyle Terrace.

iii.—ASSOCIATED SOCIETIES OF THE UNIVERSITY OF EDINBURGH.

This Association was instituted in 1833, and is a Union of Literary and Debating Societies. It is composed at the present date of five societies :—The Dialectic, Scots Law, Diagnostic, Philosophical, and Philomathic Societies. The following is the list of the Office-Bearers of the Association, and of the respective component societies :—

Honorary President—The Most Hon. the Marquis of Bute, K.T., LL.D. *Hon. Vice-Presidents*—The Senatus Academicus of the University (*ex officiis*). *Secretary*—Peter R. Landreth, 1 Victoria Terrace, Portobello.

DIALECTIC SOCIETY.—INSTITUTED IN 1787.

Presidents—C. J. L. Boyd, A. R. Wilson, A. H. M'Lean, M.A.; E. J. Gunn, M.A.; H. H. Barrett, M.A. *Secretary*—Maxwell Flem-

ing. *Treasurer*—W. M. Landale. *Delegates to the Associated Societies' Council*—The Secretary and C. R. Gillies Smith.

This Society meets in the Societies' Hall every Thursday Evening at 8 o'clock, for the prosecution of Literary and Philosophical Composition, Criticism, and Debate.

SCOTS LAW SOCIETY.—Instituted in 1815.

Presidents—A. H. B. Constable, M.A., LL.B., Advocate; William Lennox, S.S.C.; William Hunter, M.A., LL.B., Advocate. *Secretary*—J. M. Irvine, M.A., B.Sc., Advocate. *Assist.-Secretary*—H. W. Gibson, M.A. *Treasurer*—A. S. Muir, 8 Saxe Coburg Place.

This Society meets every Monday Evening during the Winter Session, at 8.30 o'clock, for the purpose of debating and reading Essays.

DIAGNOSTIC SOCIETY.—Instituted in 1816.

Presidents—L. C. D. Douglas, J. M. Kirkpatrick, M.A.; H. S. N. Callender, and J. D. Mackenzie. *Secretary*—W. R. T. Middleton. *Treasurer*—L. W. Dickson. *Delegates to the Council*—L. C. D. Douglas, and R. C. Malcolm, M.A.

This Society meets every Tuesday Evening during the Winter Session, at 9 o'clock, in the Associated Societies' Hall, for the purpose of debating and reading Essays.

PHILOMATHIC SOCIETY.—Instituted in 1858.

Presidents—Archibald J. D. Scott, M.A.; Angus Burgess, M.A.; Robert S. Craig. *Secretary*—Charles Stewart. *Assistant Secretary*—Robert Lees. *Treasurer*—C. F. Charleson.

This Society meets in the Societies' Hall every Friday evening during the Winter Session at 8 P.M., for the purposes of debating and reading Essays.

PHILOSOPHICAL SOCIETY.—Instituted in 1871.

Honorary Presidents—The Principal; Professors Campbell Fraser and Calderwood; J. Hutchison Stirling, LL.D. (*ex officiis*), and Professor Lawrie, LL.D. *Senior President*—W. G. Smith, M.A. *Presidents*—D. Mackenzie, L. G. Irvine, M.A.; C. M. Douglas. *Secretary*—W. Ingram, M.A. *Treasurer*—Johnstone Murray.

This Society meets in the Associated Societies' Hall every Wednesday evening during the Winter Session, at 8 o'clock, for Philosophical Criticism and Investigation.

iv.—ATHLETIC CLUB.

President—Sir William Muir, K.C.S.I., D.C.L., LL.D. *Vice-Presidents*—Right Hon. The Earl of Rosebery; The Lord Justice-Clerk,

C.B., Q.C., LL.D.; W. M'Ewan, Esq., M.P.; Professors Annandale, Butcher, Chiene, Cossar Ewart, Kirkpatrick; H. H. Almond, Esq., LL.D. *Chairman*—G. Sims Woodhead, Esq., M.D. *Hon. Secretary*—J. G. C. Scott, 15 Forrest Road. *Treasurer*—C. E. W. M'Pherson, C.A., 28 St Andrew Square. *Assistant Secretary and Treasurer*—J. T. Mitchell.

Any present or past Student of the University may become a Member. Subscriptions payable to Messrs E. & S. LIVINGSTONE, 15 Teviot Place (*opposite University New Buildings*), from whom further particulars may be obtained. See also Notices on the Board at the University Gates.

v.—BOAT CLUB.

Honorary Members—Professors Maclagan, Muirhead, Fraser-Tytler, and Crum Brown. *Captain*—A. J. Paterson. *Vice-Captain*—R. D. Rainie. *Honorary Secretary and Treasurer*—John Abernethy, 8 York Place.

The Club consists of present and past Students of this and other Universities.

The Boathouse is at Viewforth Bridge, Union Canal. Annual Races in June or July.

vi.—CELTIC SOCIETY.

INSTITUTED 1852.

Honorary President—Professor Mackinnon. *Presidents*—Hector MacKinnon, M.A.; Donald MacIntosh, Norman MacLean, M.A. *Secretary*—Dugald Macfarlane. *Assistant Secretary*—Alex. Kennedy. *Treasurer*—Naughton MacNaughton.

The Society meets every Saturday evening during the Winter Session at 7 o'clock, for debating and reading essays. Literary business conducted in Gaelic every third evening.

vii.—CHEMICAL SOCIETY.

INSTITUTED 1874.

President—Prof. A. Crum Brown, M.D., D.Sc. *Vice-Presidents*—John Gibson, Ph.D., F.R.S.E.; Ralph Stockman, M.D. *Secretary*—Alexander Smith, B.Sc., Ph.D. *Treasurer*—Hugh Marshall, D.Sc., F.R.S.E. *Librarian*—Leonard Dobbin, Ph.D., F.R.S.E.

This Society meets on alternate Wednesdays at 8 P.M. during the Winter Session, for the reading and discussion of papers on Chemistry and allied sciences.

Excursions to chemical works, &c., during the Summer Session.

viii.—CHRISTIAN EVIDENCE SOCIETY.

President—Sir William Muir, K.C.S.I. *Vice-Presidents*—Professors Flint, D.D., LL.D.; Calderwood, LL.D.; Blaikie, D.D., LL.D.; Alex. R. Simpson, M.D.; James Fraser-Tytler, LL.D.,

W.S. ; Principal Simon, Ph.D. *Convener of Executive Committee*—Paul M. Stork. *Secretary and Treasurer*—Alfred Hay.

The chief object of the Society is to counteract the influence of teaching opposed to Christianity.

ix.—CYCLING CLUB.

President—J. H. A. Laing, M.B. *Captain*—J. Luke, M.B. *Sub-Captains—Bicycle*—S. G. Davidson, M.A.—*Tricycle*—A. Cameron. *Hon. Secretary*—F. J. Hare, B.Sc., University Union.

All present and former Students are eligible. Subscriptions payable to the *Treasurers*, Messrs E. & S. Livingstone, 15 Teviot Place. Runs held on Saturdays (morning and afternoon), and on Wednesday evenings, throughout the Summer.

x.—DUMFRIESSHIRE AND GALLOWAY LITERARY SOCIETY.

INSTITUTED 1847.

Presidents—James K. Wilkin, J. W. D. Kirkland, J. A. Bayne, M.A. ; Jonathan Townsley, M.A. *Joint-Secretaries*—James Blacklock, James Mackenna. *Treasurer*—A. H. M. Macmorran.

The Society meets every Saturday evening in the Public Law Class-Room, at 7 P.M.

xi.—FREE CHURCH UNDERGRADUATES SOCIETY.

INSTITUTED 1886.

Honorary President—Rev. Dr C. Smith, D.D. *Presidents*—E. J. Cuthbertson, C. Forbes Charleson. *Secretary*—J. D. Gilruth. *Treasurer*—R. H. Paterson.

The object of this Society is to promote the friendly intercourse of its members, socially and intellectually. Meetings are held every Saturday evening during the Winter Session in Dr Moxey's Class-Room, F.C. College, Mound, at 7 P.M.

xii.—GOLF CLUB.

INSTITUTED 1881.

President — The Right Hon. John Inglis, LL.D., D.C.L., Chancellor of the University. *Vice-Presidents*—Hon. Lord Shand, Professors Nicholson, Chiene, and Dr Argyll Robertson. *Honorary Members*—Professors Annandale, Chrystal, T. R. Fraser, Greenfield, Rutherford, and Tait, The Hon. Lords Rutherfurd Clark and Lee, The Rev. Principal Rainy, Hon. H. J. Moncreiff, Dr Harvey, Dr Bryce, W. Young, W.S., Leslie M. Balfour, W.S., Dr John Duncan. *Captain*—W. Gibson Bloxsom. *Vice-Captain*—F. Kinloch. *Treasurer*

—C. L. Blaikie, C.A., 88 George Street. *Secretary*—J. E. Gordon, 34 Chalmers Street.

Past and present Students are eligible. Subscription, 5s.; Entry-money, 10s.

xiii.—MEDICAL STUDENTS' CHRISTIAN ASSOCIATION.

Honorary President—Professor Grainger Stewart. *Honorary Vice-Presidents*—Professors Sir Douglas Maclagan, M.D.; Crum Brown, M.D., D.Sc.; Simpson, M.D.; Greenfield, M.D.; Chiene, M.D.; Mr A. G. Miller, Mr C. W. Cathcart, Dr A. H. F. Barbour, M.A., M.D., B.Sc. *Secretaries*—C. C. Douglas, 3 George Square; G. V. Lockett, 21 Warrender Park Terrace; A. Van Niekerk, B.A., 64 Marchmont Crescent. *Treasurer*—R. M. Leslie, M.A., B.Sc., 3 Oxford Street.

The work of the Association includes:—1. Monthly Sermons; 2. Weekly Prayer-Meetings; 3. Occasional Lectures; 4. Ward Services; 5. Social Meetings.

xiv.—MISSIONARY ASSOCIATION.

INSTITUTED 1825.

Honorary President—Principal Sir W. Muir, K.C.S.I. *Honorary Vice-Presidents*—Professors Butcher, Calderwood, Charteris and Sir Douglas Maclagan. *President*—A. S. Martin, M.A. *Vice-President*—Wm. Borland, M.A. *Home Mission Superintendents*—J. H. Pierson, A. W. Smith, M.A.; D. A. Rollo, M.A. *Treasurer*—John Hunter. *Secretary*—W. A. Knowles, M.A. *Assistant Treasurer*—A. S. Smith, M.A. *Assistant Secretary*—P. Sinclair, M.A. *Librarian*—A. Morrison, M.A. *Vice-Librarian*—J. Crocket.

The Association meets to transact business, in conjunction with the University Prayer Meeting, in the Public Law Class Room on alternate Saturdays, at 10 o'clock.

xv.—MUSICAL SOCIETY.

ESTABLISHED 1867.

Patron—H.R.H. The Duke of Edinburgh.

President and Conductor—Professor Sir H. Oakeley, Mus. Doc., D.C.L., LL.D. *Vice-Presidents*—Principal Sir W. Muir, K.C.S.I.; Professors Calderwood, Flint, Maclagan, Rutherford, Kirkpatrick, Butcher, Annandale, Armstrong, and Dr D. Hepburn. *Hon. or Corresponding Vice-Presidents*—The President of Aberdeen University Musical Society, Aberdeen; Prof. Sir Robert Stewart, Dublin. *Treasurer*—T. Dickson. *Secretary*—A. J. Bienemann.

The Society meets in the Music Class Room, Park Place, weekly during the Winter Session, beginning usually on the second Friday of November. Elementary Class may be formed.

xvi.—NATURAL SCIENCE CLUB.

FOUNDED 1880.

UNIVERSITY HALL, 2 MOUND PLACE.

Honorary President—Professor Balfour. *Secretary*—W. E. Fothergill, M.A., B.Sc., University Hall.

Meetings fortnightly during the Session, on 2nd Monday in each month. Papers on scientific subjects are read and discussed.

xvii.—PHYSICAL SOCIETY.

This Society meets on the second and fourth Tuesdays of each month, during the Session, at 8 P.M., for the discussion of subjects connected with Mathematical and Experimental Physics.

Presidents—W. Peddie, D.Sc.; J. T. Morrison, M.A. *Secretary and Treasurer*—A. Crichton Mitchell, B.Sc., Physical Laboratory, University.

xviii.—RIFLE COMPANY SHOOTING CLUB.

INSTITUTED 1873.

President—Captain Bayley Balfour. *Vice-Presidents*—Lieut. Bannerman. *Secretary and Treasurer*—Lieut. Bannerman.

This Club is open to members of No. 4 (University Co.) Q.E.R.V.B. Weekly competitions at Hunter's Bog. Prizes given at the end of the season for best aggregate scores.

xix.—SWIMMING CLUB.

Hon. President—Principal Sir W. Muir. *Hon. Vice-Presidents*—Professors Annandale, Balfour, Butcher, Grainger Stewart, Kirkpatrick, *Emeritus* Prof. Blackie, Drs John Duncan, Hepburn, Littlejohn, Woodhead, Cotterill, and Haycraft. *President*—C. W. Donald. *Vice-President*—C. H. Newnham. *Secretaries*—W. E. Fothergill, M.A., B.Sc., University Hall, and D. M. Hutton, 6 Meadow Place. *Treasurer*—J. A. Hamilton, 10 Glengyle Terrace.

Club practices in the Corporation Baths on Monday, Wednesday, and Friday afternoons; and at Trinity Chain Pier during the summer session. Competitions (for which medals are awarded weekly) in the Corporation Baths every Friday afternoon throughout both sessions. Students and Graduates eligible.

xx.—THEOLOGICAL SOCIETY.

FOUNDED 1776.

Presidents—A. L. Johnston; David A. Rollo, M.A.; William Borland, M.A.; Alexander Waters, M.A. *Secretary and Treasurer*—W. A. Knowles, M.A.

This Society is open to present and past Students of any Theological Seminary. Meetings every Friday evening at 8.30 P.M., during the Winter Session, for debates on Theology, Church History, Biblical Criticism, General Ecclesiastical Polity, and kindred subjects.

xxi.—TOTAL ABSTINENCE SOCIETY.

INSTITUTED 1853.

Honorary President—Professor Simpson. *President*—David A. Rollo, M.A. *Vice-Presidents*—J. C. Maxwell, M.A.; D. R. Scott. *Joint-Secretaries—Med.*—Albert G. Fenn, 61 Warrender Park Road; *Arts*—Thos. M. Ness, 98 Findhorn Place. *Treasurer*—H. J. Hope-Gill, C.A., 42 Northumberland Place. *Superintendent of Mission*—D. R. Scott.

Principle—Total Abstinence during year of enrolment.

xxii.—UNIVERSITY HALL.

(2 MOUND PLACE.)

FOUNDED MAY 1887.

University Hall is designed as a social residence for students. It is situated within a short distance of the University. The accommodation includes a dining-hall, common sitting-room, private studies, and bedrooms. The rents range from 10s. to 16s. per week. The cost of board averages 12s. 6d. each per week, and is shared by all the residents equally.

The external affairs of the Hall are in the hands of the following Consulting Committee:—Professors Butcher, Chiene, Kirkpatrick; Æneas Mackay, Esq., M. T. Stormonth Darling, Esq., R. Fitzroy Bell, Esq., W. K. Dickson, Esq., Professor Patrick Geddes, Dr George Mackay, Dr Hunter Stewart, Dr Sims Woodhead, Rev. D. Macrae Stewart, Dr E. F. Armour, Dr R. C. Buist, and two representatives from those in residence. J. Arthur Thomson, Esq., is Secretary of this Committee.

The internal affairs are managed by a committee of residents elected monthly. Application for admission should be made to the Hon. Sec. at the Hall.

xxiii.—WESLEYAN UNDERGRADUATE ASSOCIATION.

INSTITUTED 1888.

President—Rev. T. T. Lanfbert. *Vice-Presidents*—Rev. G. Jackson, B.A. (Lond.); Rev. J. Scott Lidgett, B.A. (Cantab.); Rev. George Gibson. *Secretary and Treasurer*—J. Q. Donald, 3 Lauder Road.

The object of this Association is to promote the social and intellectual intercourse of its members. Monthly meetings during the winter session. Excursions in summer session.

xxiv.—WHITE CROSS SOCIETY.

INSTITUTED 1884.

President—Principal Sir W. Muir, K.C.S.I. *Vice-Presidents*—Professors Charteris, Lorimer, Calderwood, Sir Douglas Maclagan. *Hon.-Treasurer*—Dr A. H. F. Barbour, 24 Melville Street. *Hon.-Secretary*—George Mackay, M.D., 2 Randolph Place.

The object of this Society is to promote a healthy public opinion amongst the Students of this University on the subject of Personal and Social Purity. The work is carried on chiefly by personal influence and by addresses given from time to time by men of recognised public position. The Secretary will be glad to enrol new members and give any desired information.

VIII.—STUDENTS' REPRESENTATIVE COUNCIL.

FOUNDED 1884.

The aims of the Council are—(1.) To represent the students in matters affecting their interests; (2.) To afford a recognized means of communication between the students and the University authorities; and (3.) To promote social life and academic unity among the students. The Council is elected annually in November, partly by the students of the different Faculties, and partly by the recognised students' societies. Meetings are held in November, December, January, February, March, May, June, July, and October. At the November meeting an executive committee is elected, consisting of three presidents, two secretaries and treasurers, and ten other members, representing the four Faculties.

Presidents—W. Campbell Lahore, Harry G. Melville, A. Stodart Walker. *Secretaries and Treasurers*—L. Clarence D. Douglas, R. G. Scott, M.A. *Executive Committee*—W. Lyall Wilson, M.A.; W. Ingram, M.A.; D. B. Bogle, M.A.; H. E. Fraser, M.A.; R. E. Harrold, D. G. Campbell, T. G. Macormack, M.A.; W. L. Stephen, C. R. Gillies Smith, R. Burns Begg.

IX.—DIRECTORY OF STUDENTS' LODGINGS.

(Under the Management of the Students' Representative Council.)

This Directory (containing terms, references, and full particulars) lies open for inspection by Students in the Matriculation Office and in the Students' Common Room at the University New Buildings.

X.—THE EDINBURGH UNIVERSITY UNION.

The Union is open to all Students and Graduates of the University, and its purpose is "the provision and maintennace of means of social and academic intercourse for its members." The Building, which includes a large hall (in which debates are held), luncheon, smoking, and reading rooms, besides a library and large gymnasium, is situated in Park Street, near both the old and the new buildings. The reading-room is amply supplied with periodicals and newspapers, the smoking-room is furnished with two billiard tables, and the library (in process of formation) contains University, Class, Text, and Reference books. A first-class instructor is in attendance at the gymnasium. Matriculated Students are entitled to Membership on payment of 5s. entry-money, and 10s. 6d. annual subscription; while Graduates pay an annual subscription of £1, 1s., or £10, 10s. for Life-Membership. The year of Membership dates from 1st May or from 1st October. Copies of the Laws may be obtained from the Treasurer.

Trustees—The Right Hon. the Lord Justice-General, Chancellor of the University; Principal Sir Wm. Muir; Sir Alex. Christison, Bart., M.D.; Professor Butcher; and J. R. Findlay, Esq. *President*—H. G. Melville. *Hon. Secretary*—Geo. Porter. *Treasurer*—W. A. Wood, C.A., 28 Frederick Street. *Committee of Management*—Professor Annandale, Professor Butcher, Messrs R. Fitzroy Bell, James Avon Clyde, W. Kinmont, G. Sims Woodhead, L. C. D. Douglas, E. B. Fuller, H. S. Wansbrough Jones, W. Campbell Lahore, A. Stodart Walker, and L. U. Young.

XI.—STATISTICS OF THE RECTORIAL ELECTIONS IN THE UNIVERSITY OF EDINBURGH, 1859-1887.

1859.—*Gladstone*, 642.—*Neaves*, 527. Matriculated students, 1302.
1862.—*Gladstone* (*unopposed*). Matriculated students, 1331.
1865.—*Carlyle*, 657.—*Disraeli*, 310. Matriculated students, 1288.
1868.—*Moncreiff*, 607.—*Ruskin*, 425. Matriculated students, 1398.
1871.—*Maxwell*, 594.—*R. Palmer*, 502. Matriculated students, 1533.
1874.—*Derby*, 770.—*Playfair*, 583. Matriculated students, 1767.
1877.—*Hartington*, 932.—*Cross*, 684. Matriculated students, 2102.
1880.—*Rosebery*, 1024.—*Christison*, 985. Matriculated students, 2496.
1883.—*Northcote*—*Blackie*—*Trevelyan*. Matriculated students, 2660.
1886.—*Iddesleigh*, 1094.—*Playfair*, 747. Matriculated students, 2680.
1887.—*Lothian* (*unopposed*). Matriculated students, 2493.

XII.—ROYAL MEDICAL SOCIETY, EDINBURGH.

Founded 1737. Royal Charter granted 1778.

Presidents—W. G. W. Sanders, M.B., C.M.; A. L. Turner, M.B., C.M.; James Ritchie, M.A., M.B., B.Sc.; R. O. Adamson, M.A., M.B., C.M. *Secretaries*—R. D. Rudolf, M.B., C.M.; James Middlemass, M.A., B.Sc., M.B. *Chairman of Finance*—G. C. Cathcart, M.A. *Library Curator*—C. D. Sutherland. *Museum Curator*—H. G. Huie. *Editor of Transactions*—R. E. Horsley, M.B., C.M. *Treasurer*—J. R. Young. *Law-Agent*—R. R. Simpson, W.S. *Sub-Librarian*—J. Turner.

The Society meets in its hall every Friday evening during the Winter. At these meetings dissertations on medical subjects are read and debated, and communications by members on subjects of interest discussed. The Society possesses a very fine library, containing about 30,000 volumes, which is constantly being added to. There are comfortable writing and reading-rooms with all the medical journals and periodicals, books of reference and text-books specially useful to students reading for examinations. The museum contains a complete collection of Materia Medica specimens, microscopic sections, pathological preparations, herbarium, and a surgical model, on which bandaging, setting of fractures, &c., may be practised.

Annual Subscription, £2, 2s. By paying five annual subscriptions, or by paying the balance of £8, 8s. before the end of the second year of membership, a gentleman becomes a Life Member.

XIII.—ASSOCIATION FOR THE BETTER ENDOWMENT OF THE UNIVERSITY OF EDINBURGH.

President—The Right Hon. the Lord Justice-General, D.C.L., LL.D., Chancellor of the University. *Vice-Presidents*—The Right Hon. The Earl of Wemyss, LL.D.; The Right Hon. The Earl of Stair, K.T.; The Right Hon. The Earl of Rosebery, LL.D.; The Right Hon. Lord Moncreiff, LL.D.; Sir John Don-Wauchope, Bart.; Sir James Gardiner Baird, Bart.; *Principal Sir William Muir, K.C.S.I., D.C.L., LL.D.

Ordinary Members of the General Committee—(Members of the Acting Committee are marked thus *.)—The Right Hon. John B. Balfour, Q.C., LL.D., M.P.; Edmund Baxter, Esq., W.S.; *Donald Beith, Esq., W.S.; *R. Fitzroy Bell,, Esq., Advocate; *A. W. Black, Esq.; John Boyd, Esq.; *Sir Thomas J. Boyd; John Carment, Esq., LL.D., S.S.C.; Professor Chiene, F.R.C.S.E.; *Sir Alexander Christison, Bart., M.D.; *D. Christison, Esq., M.D.;

*John Christison, Esq., W.S.; The Hon. Lord Rutherfurd Clark, LL.D.; Sir Thomas Clark, Bart.; *Henry Cook, Esq., W.S.; *John Cook, Esq., W.S.; *R. Cameron Cowan, Esq., C.A.; Donald Crawford, Esq., M.P., Advocate; John Duncan, Esq., M.D.; *J. R. Findlay, Esq.; *The Rev. Archibald Fleming; *John Harrison, Esq.; James Hope, Esq., W.S.; The Hon. Lord Kinnear, LL.D.; *Æ. J. G. Mackay, LL.D., Advocate, Sheriff of Fife; David Milne-Home, Esq. of Milne Graden, LL.D.; *T. Graham Murray, Esq., W.S.; John Dick Peddie, Esq., R.S.A.; *The Hon. Bouverie F. Primrose, C.B.; *Charles Robertson, Esq., B.C.S.; *Robert Simson, Esq., B.C.S.; *George Smith, Esq., LL.D., C.I.E.; James Walker, Esq. of Dalry. *Hon. Secretary*—*Archibald Campbell Swinton, Esq. of Kimmerghame, LL.D. *Acting Secretary*—*John Christison, Esq., W.S., 40 Moray Place.

Local Honorary Secretaries—A. Mercer Adam, Esq., M.D., Boston, Lincolnshire; John Beddoe, Esq., M.D., F.R.S., Clifton, Bristol; Hugh Cleghorn, Esq., M.D., Stravithy, St Andrews; Sir Dyce Duckworth, M.D., 11 Grafton Street, Piccadilly, London; Peter Gardner, Esq., W.S., 153 St Vincent Street, Glasgow; A. F. Hutchison, Esq., Stirling; James Tait, Esq., W.S., Kelso.

Terms of Membership—Life Subscription, Ten Guineas; Annual Subscription, One Guinea. Subscriptions and Donations in excess of these Sums are earnestly solicited by the Committee.

XIV.—UNIVERSITY OF EDINBURGH BUILDINGS EXTENSION SCHEME.

At a Meeting of the Acting Committee for this Scheme, held on 16th November 1885, it was resolved to apply to Parliament for power to acquire houses in Park Street adjoining the present New Buildings as a site upon which to erect a University Hall; and under the Edinburgh University Buildings Extension Act, 1886, the following Members of the Committee, viz.:

Principal Sir W. Muir, K.C.S.I., D.C.L.,
William M'Ewan, Esq., M.P.,
Professor Sir William Turner, LL.D.,
John Christison, Esq., W.S.,

were incorporated as Trustees by the name of the Edinburgh University Buildings Extension Trustees, for the purpose of acquiring the property in question and erecting the Hall.

Mr M'Ewan munificently offered to contribute the sum required to

erect the Hall as originally contemplated, and in completion of the architect's design, upon condition of the cost of the site being provided otherwise. The Government was approached on the subject, and a Parliamentary grant of £8000 towards the cost of the site was obtained. Mr M'Ewan having provided the balance required, the site was purchased. Plans for the erection of the Hall by R. Rowand Anderson, LL.D., Architect, have been approved of and contracts entered into, and the work is now being proceeded with. By resolution of the Senatus Academicus, the new Hall will be named the "M'Ewan Hall," in grateful recognition of the founder's benefaction.

GEORGE SOMERVILLE, City Chambers,
Clerk to Trustees.

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